FIG. 1 PRIOR ART

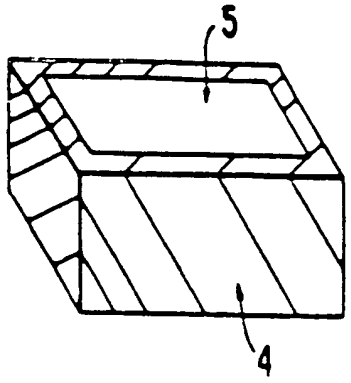


FIG. 7

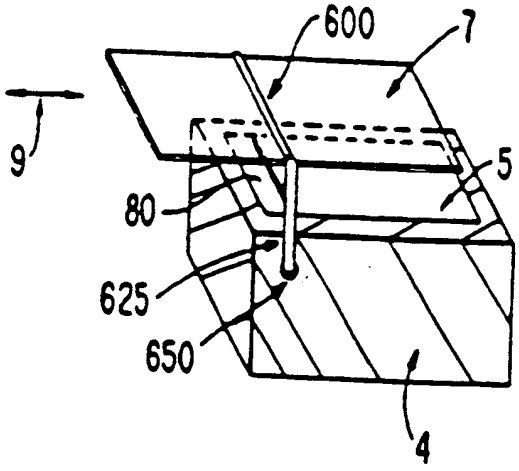


FIG. 2

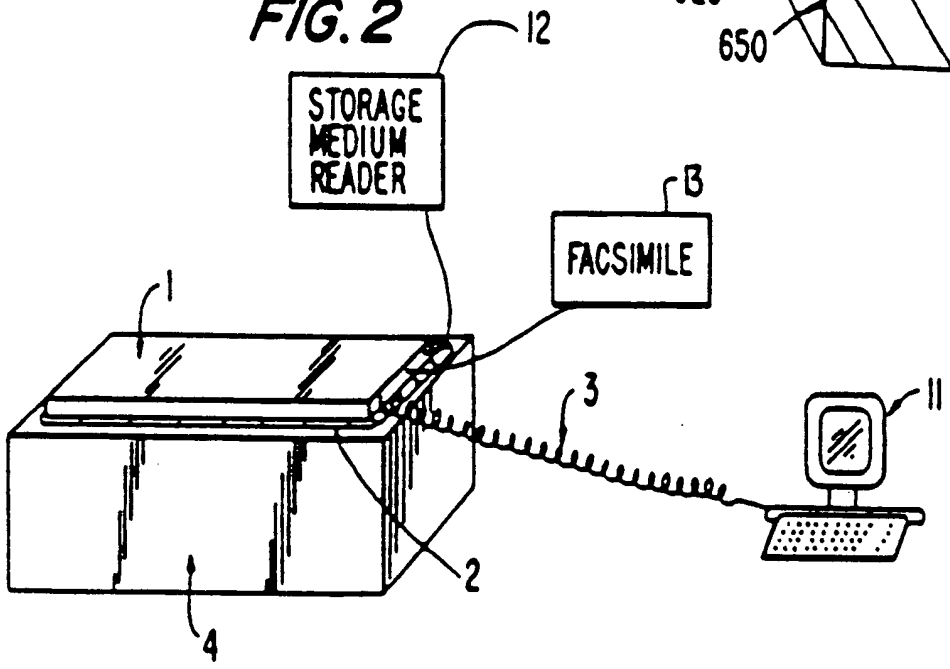


FIG. 8

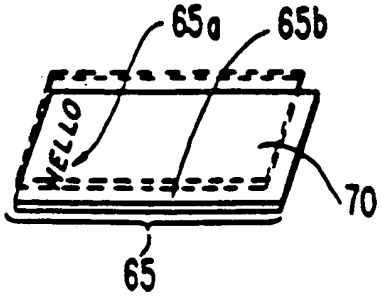


FIG. 3

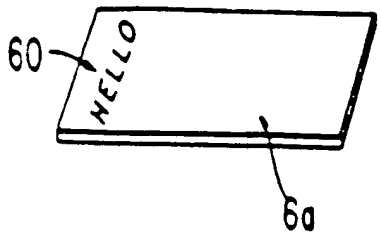


FIG. 4

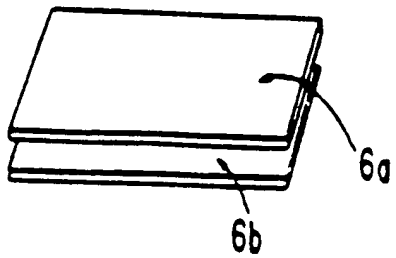


FIG. 5

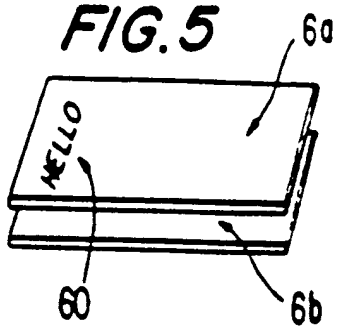


FIG. 6

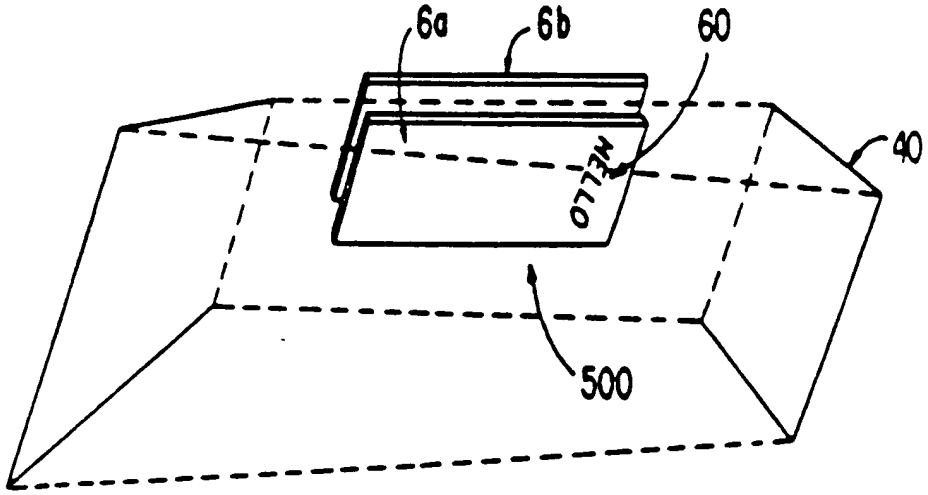


FIG. 9

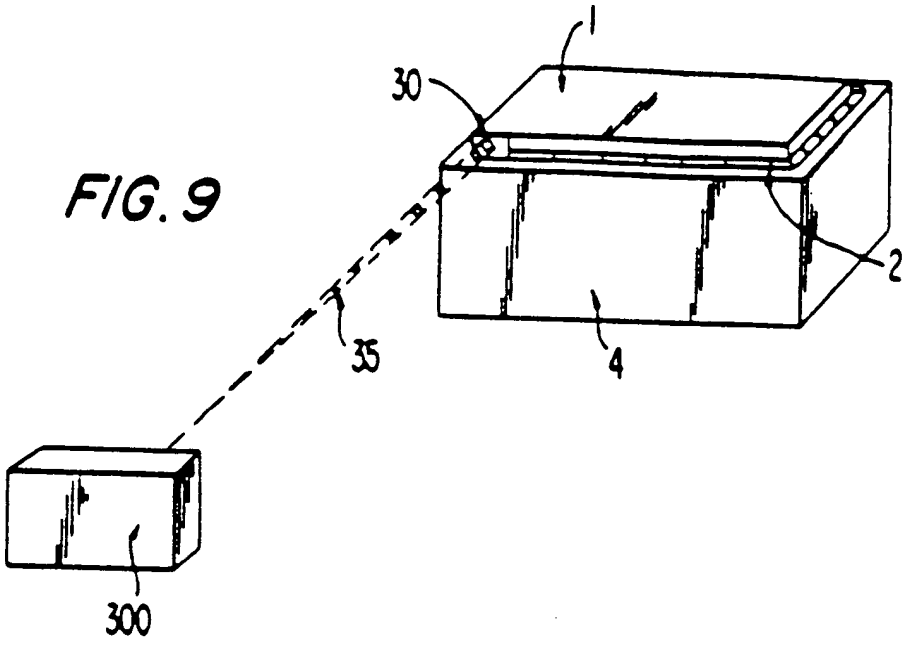


FIG. 10

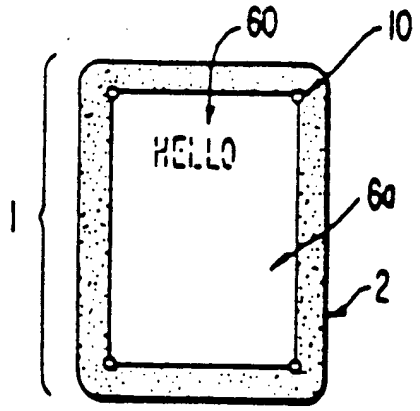


FIG. 11

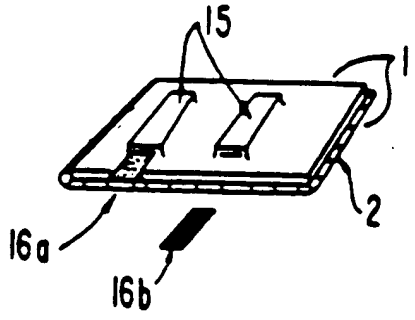


FIG. 12

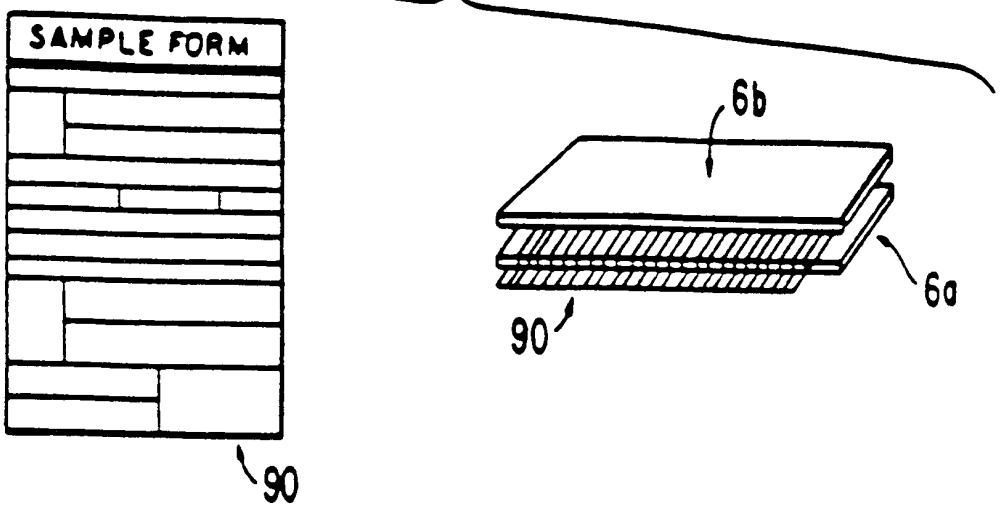


FIG. 13

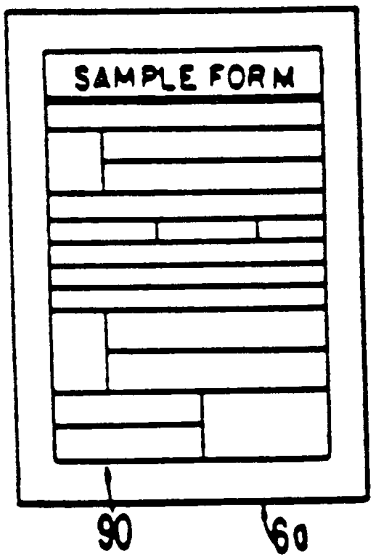
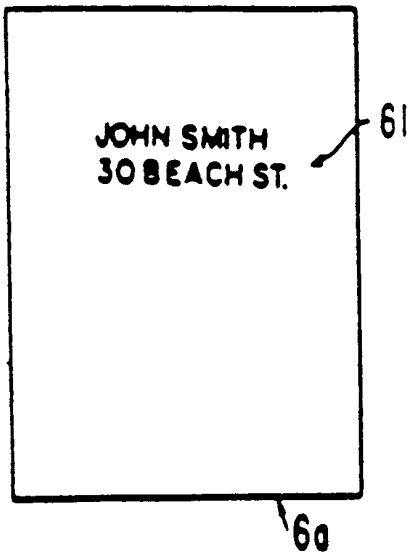


FIG. 14



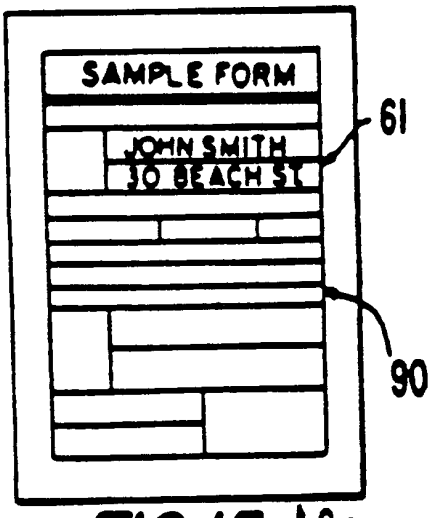
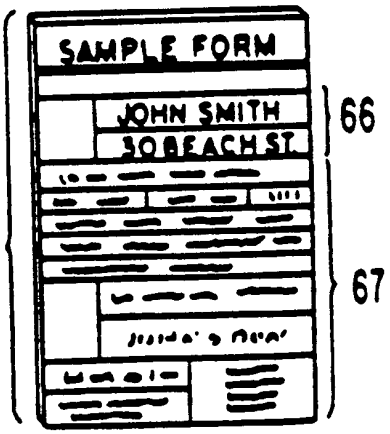


FIG. 15

FIG. 16



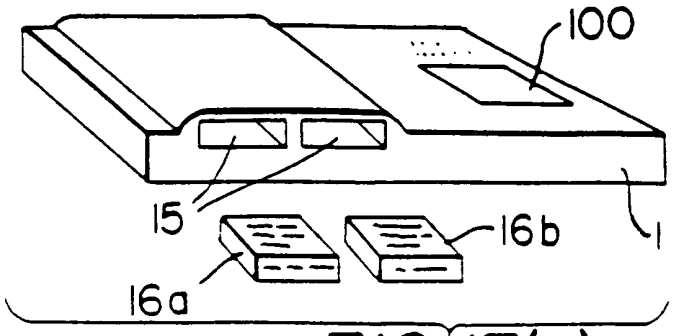


FIG. 17(e)

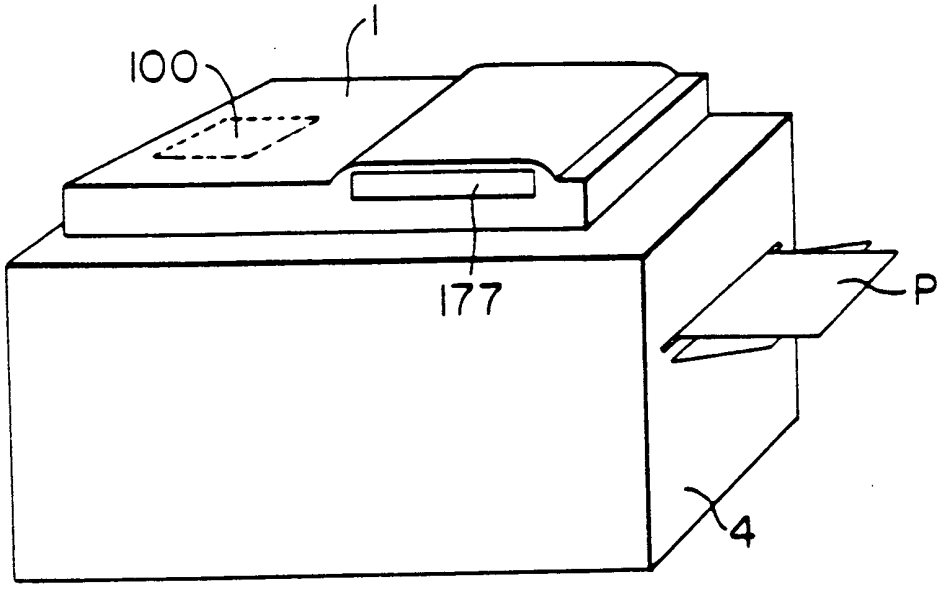


FIG. 17(d)

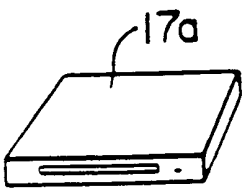


FIG. 17(a)

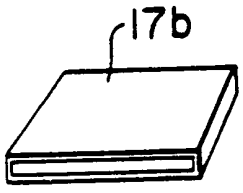


FIG. 17(b)

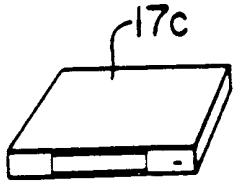


FIG. 17(c)

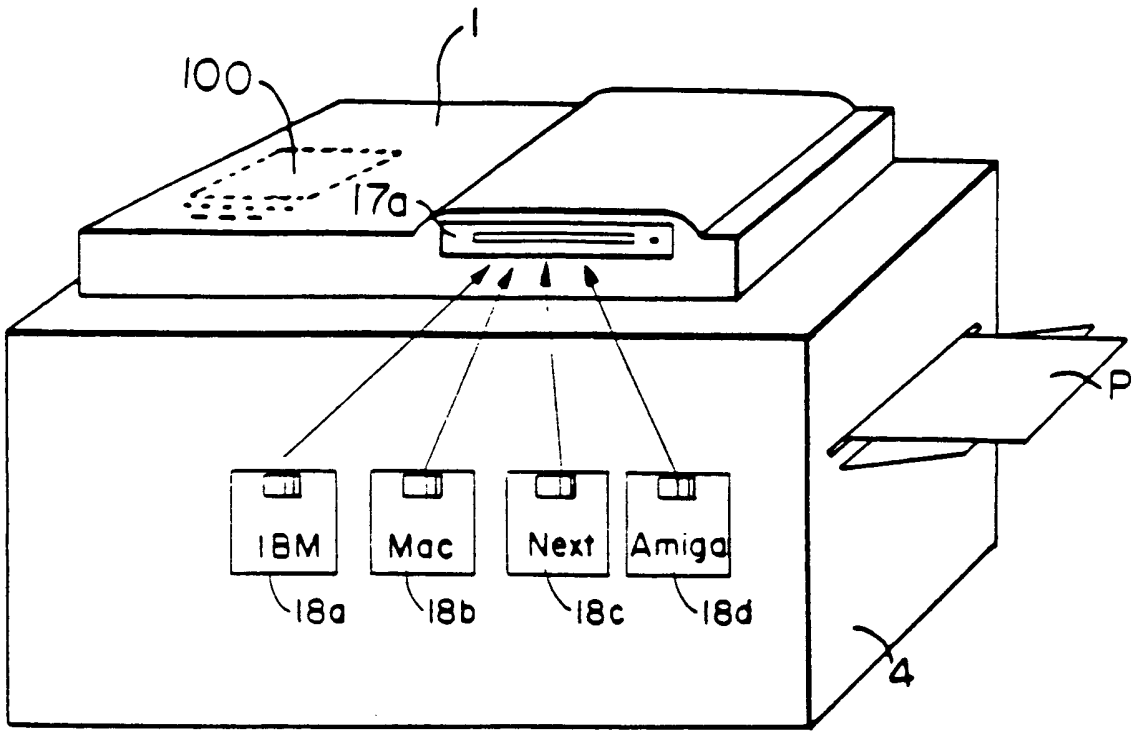


FIG. 18(a)

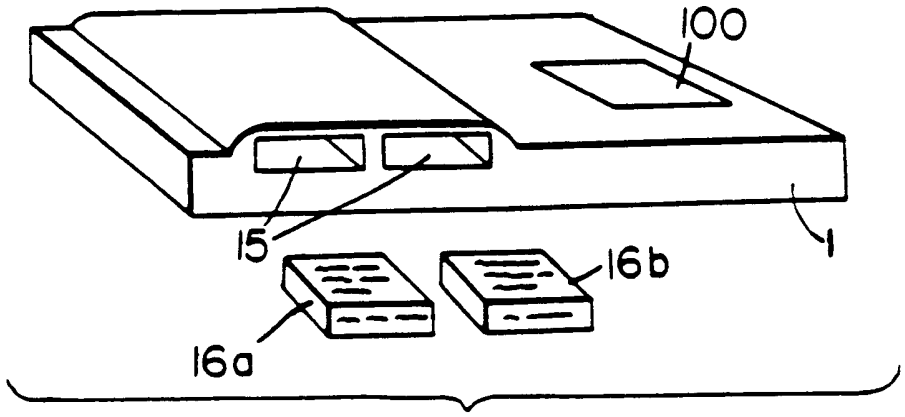


FIG. 18(b)

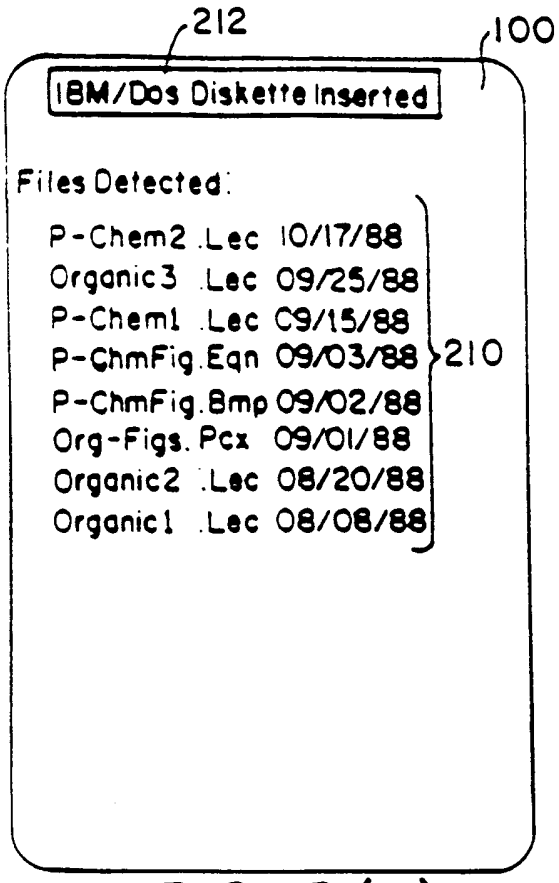


FIG. 19(a)

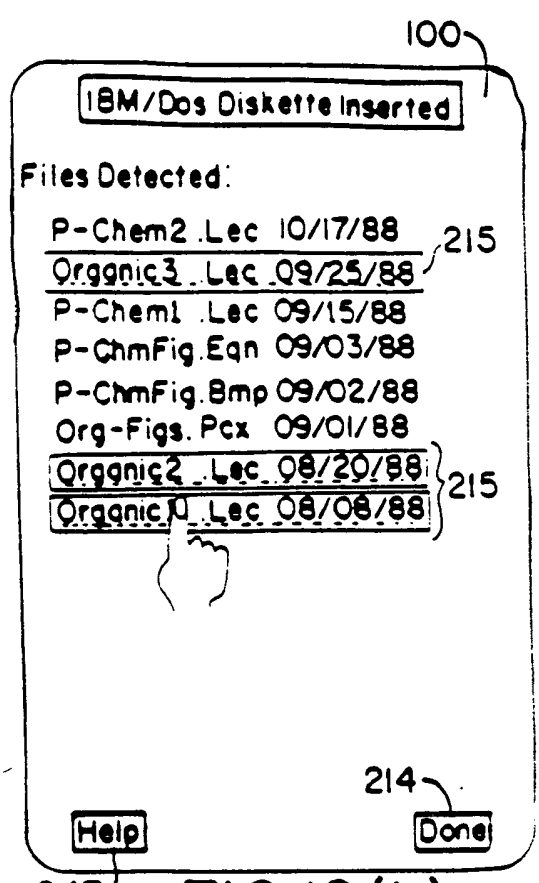


FIG. 19(b)

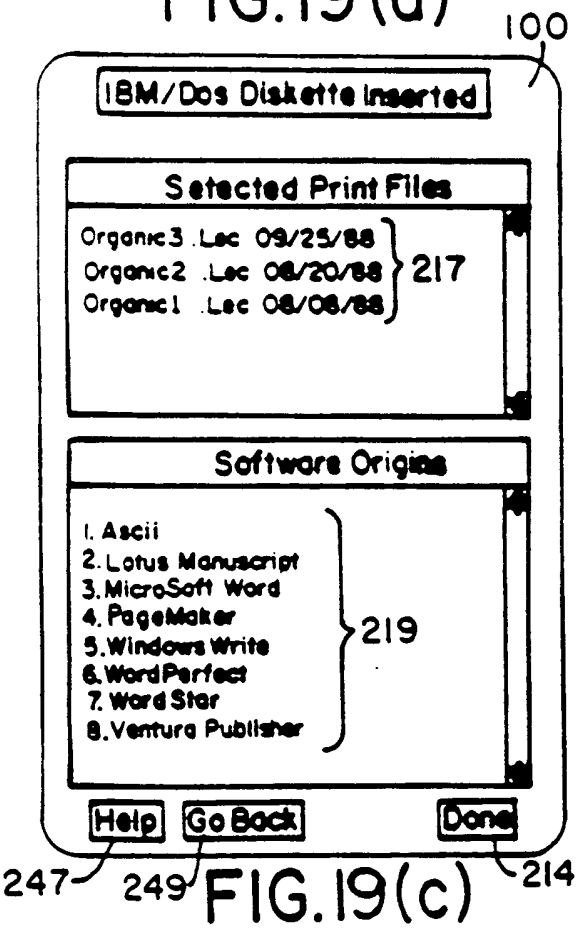


FIG. 19(c)

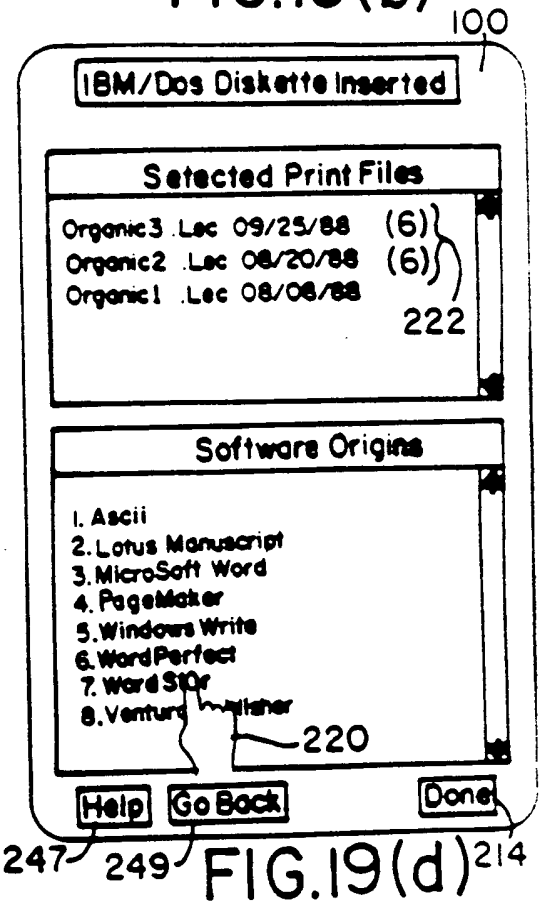


FIG. 19(d)

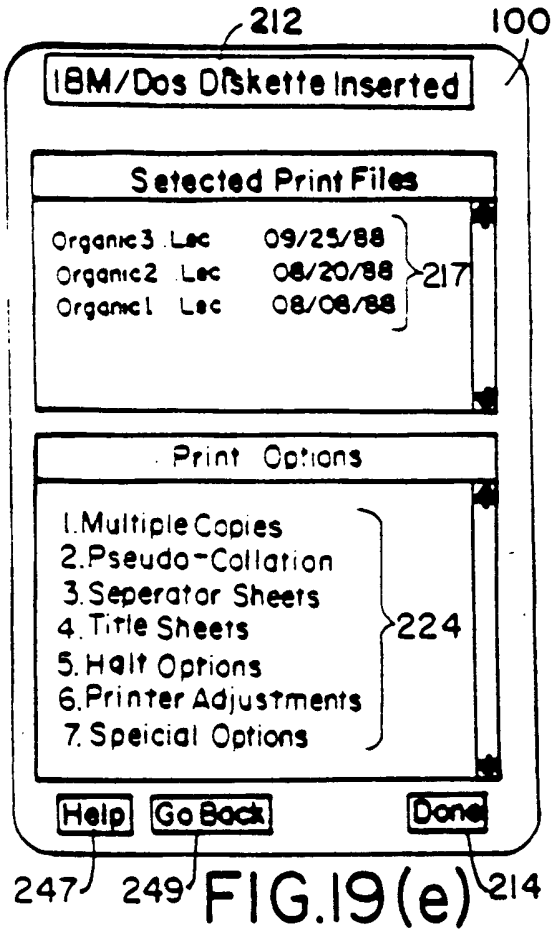


FIG.19(e)

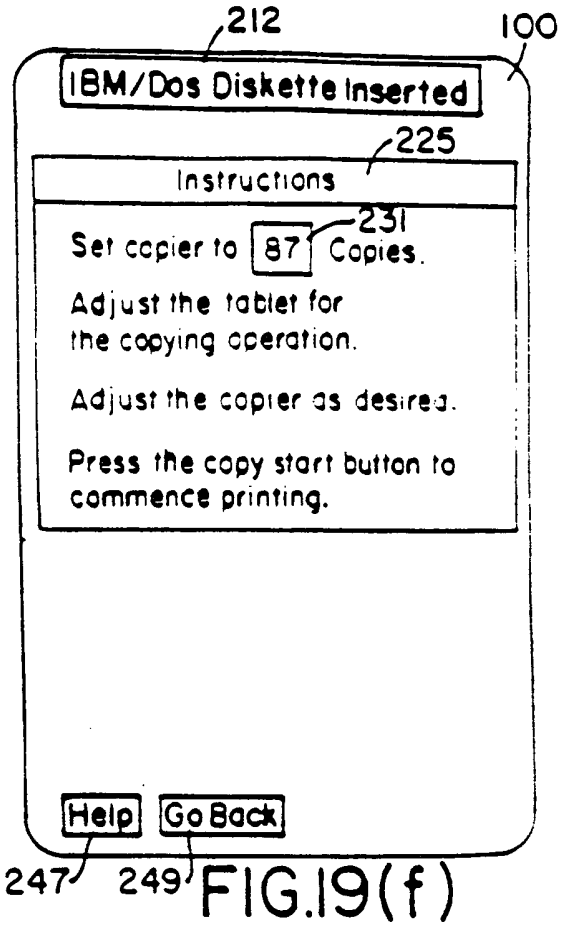


FIG.19(f)

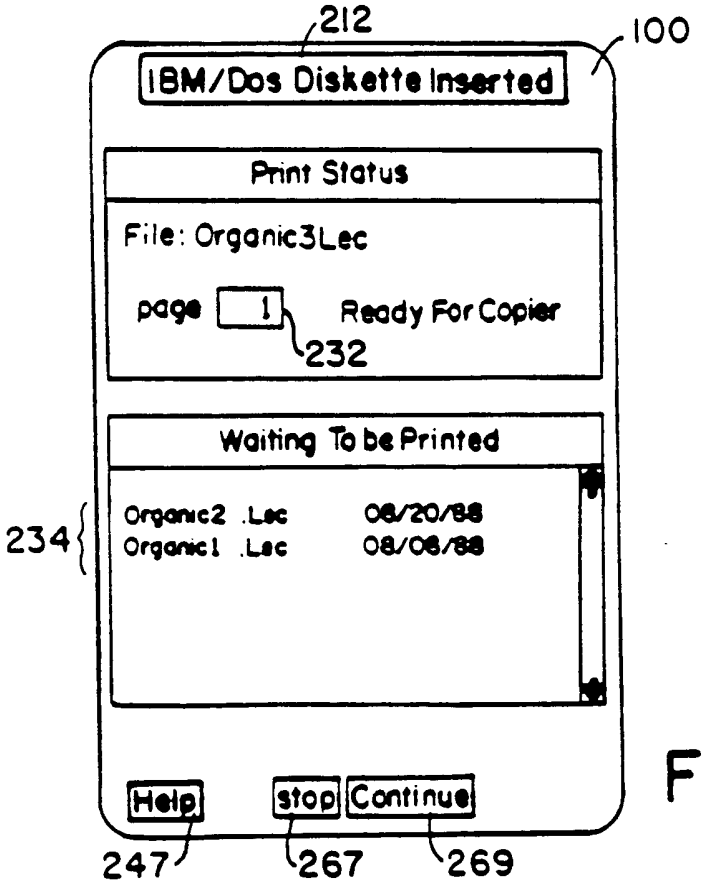


FIG.19(g)

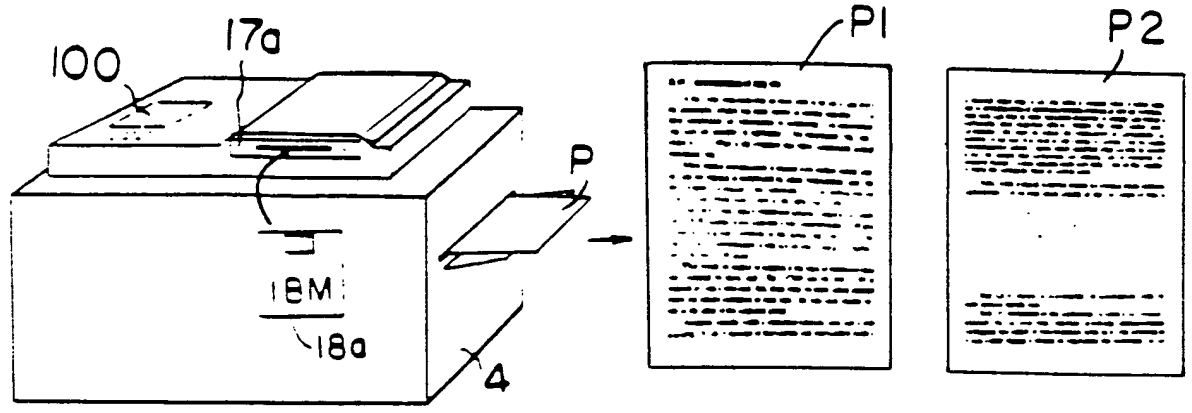


FIG. 20(a)

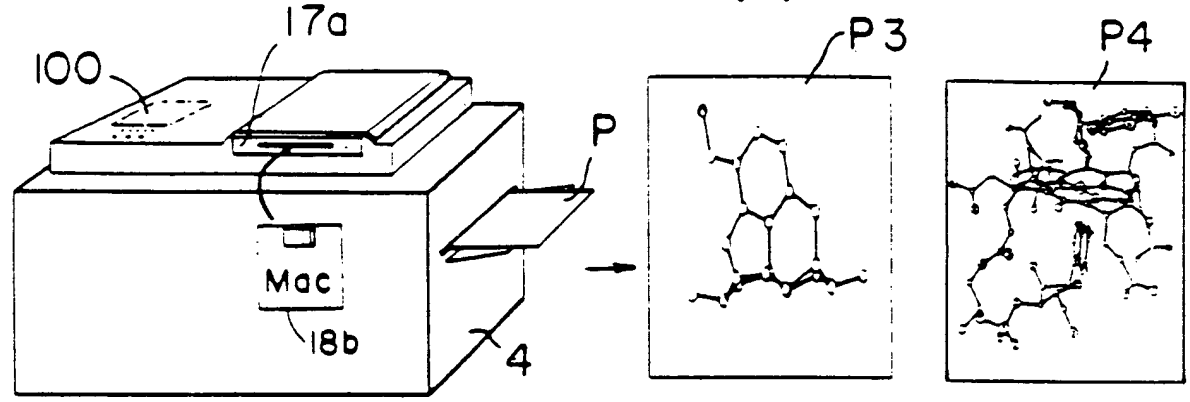


FIG. 20(b)

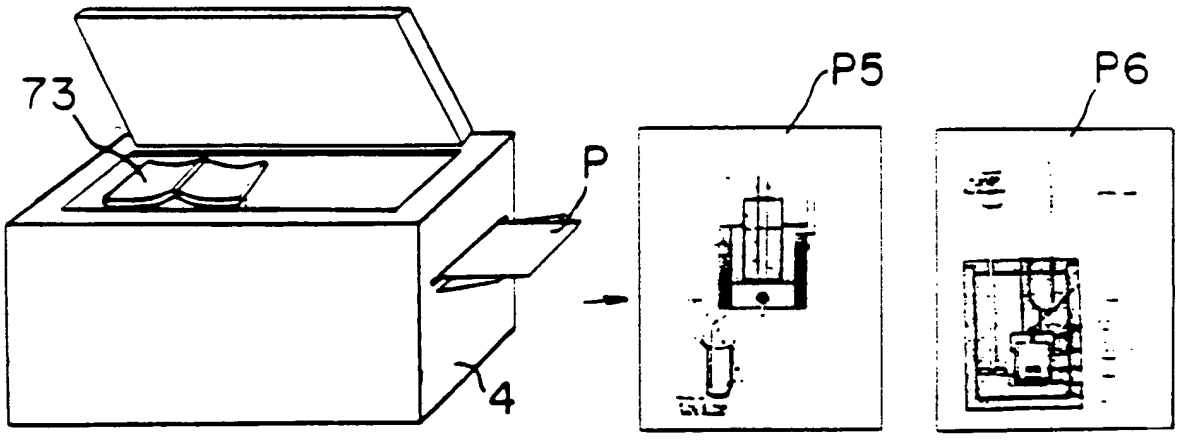


FIG. 20(c)

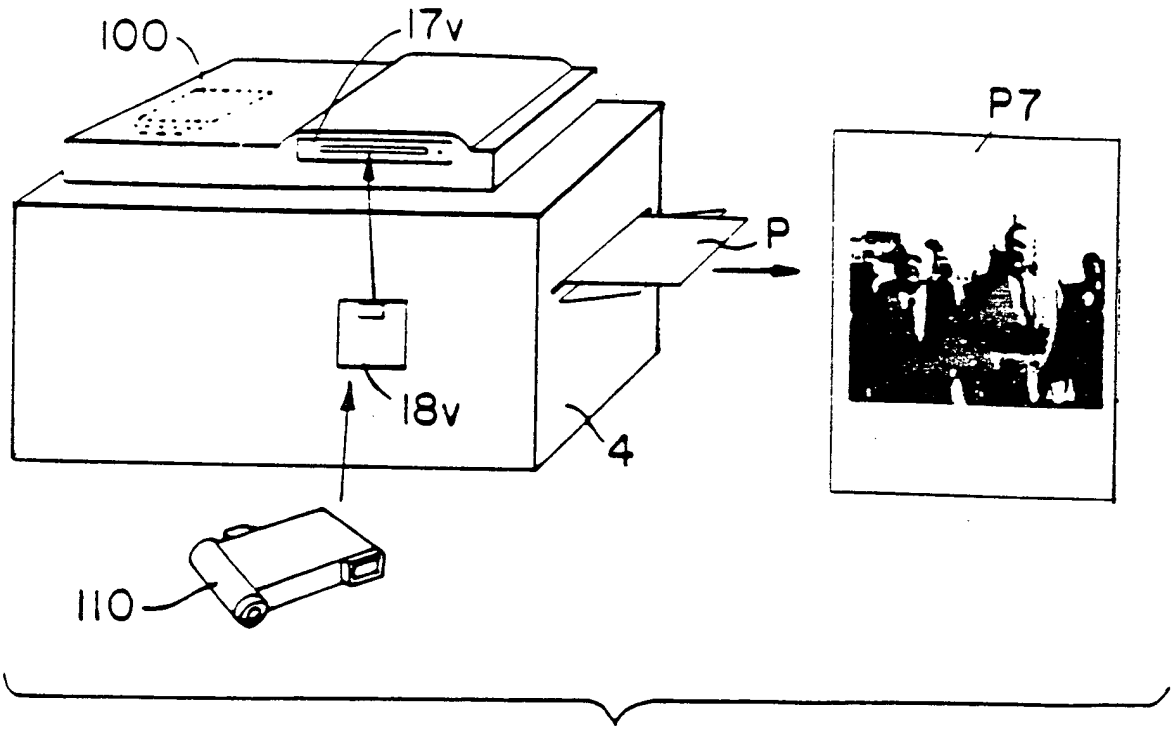


FIG.21

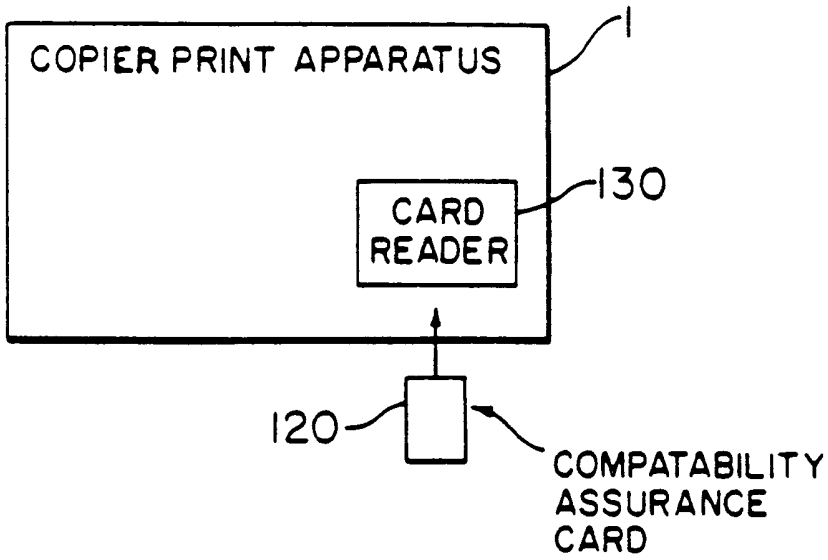

COPIER PRINT APPARATUS
1
CARD READER
130
120
COMPATABILITY ASSURANCE CARD

FIG. 22

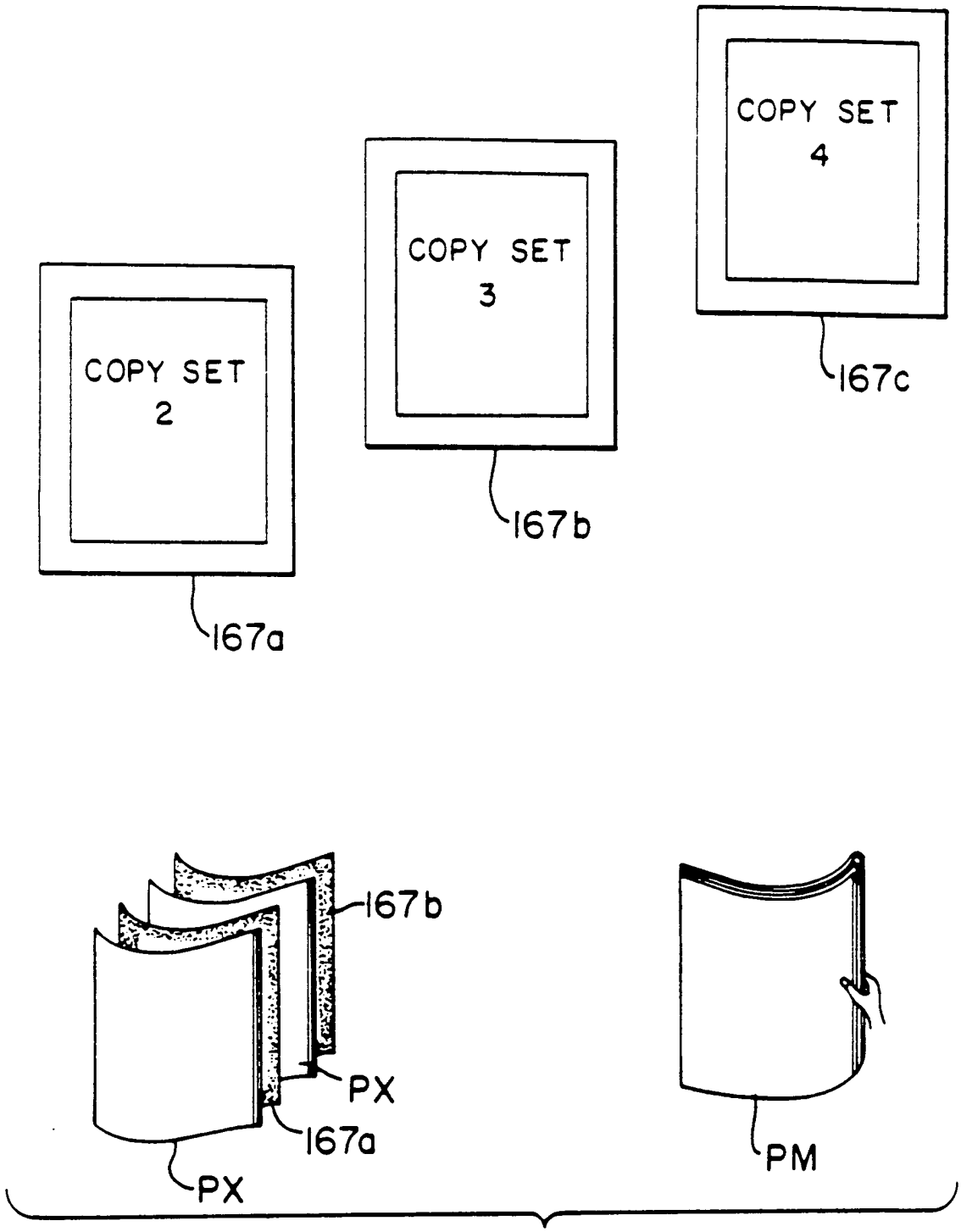

COPY SET
2
COPY SET
3
COPY SET
4
167a
167b
167c
167b
PX
167a
PX
PM

FIG. 23

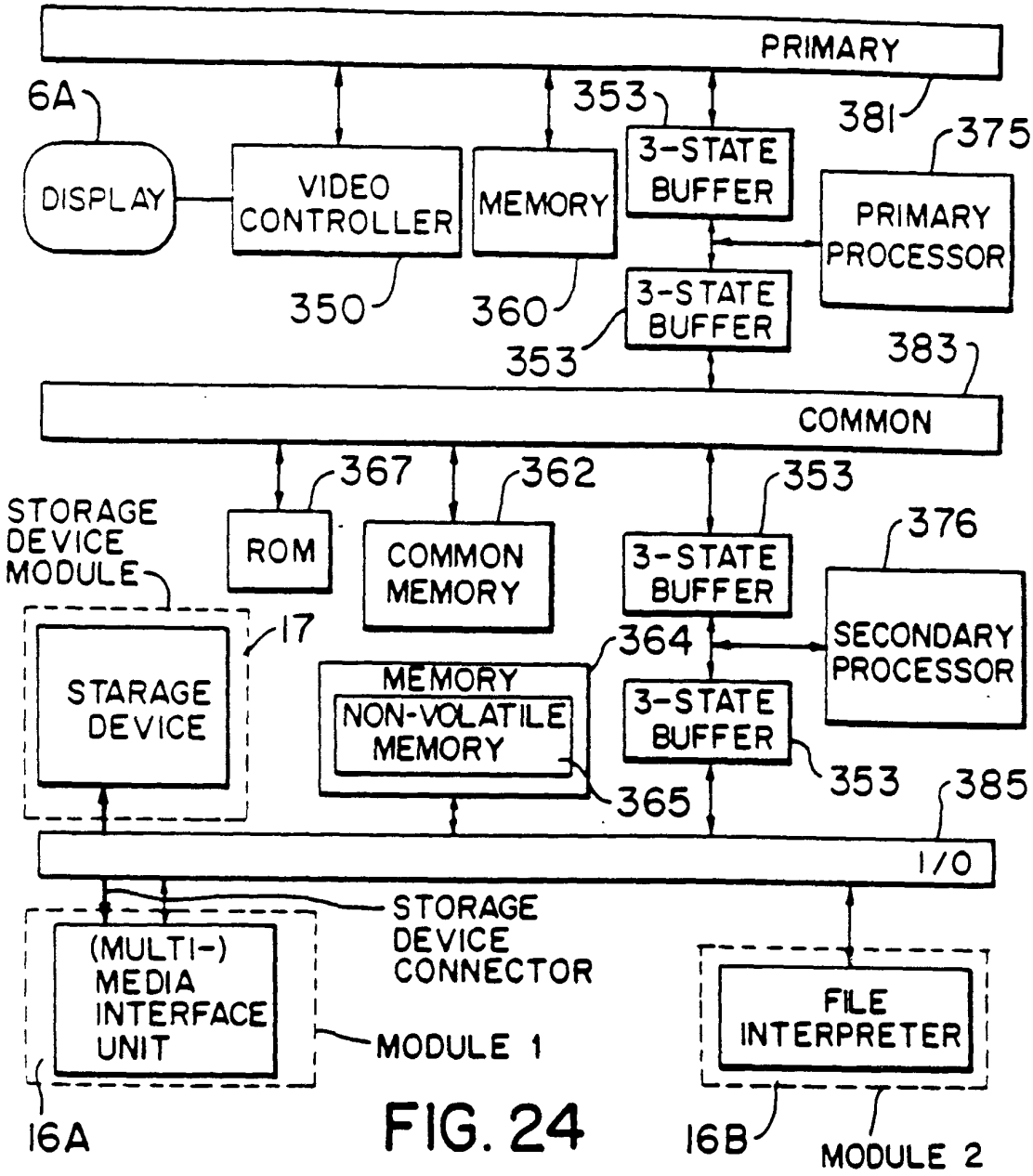

PRIMARY
6A
353
381
375
DISPLAY
VIDEO CONTROLLER
MEMORY
3-STATE BUFFER
PRIMARY PROCESSOR
350
360
3-STATE BUFFER
353
383
COMMON
367
362
353
STORAGE DEVICE MODULE
ROM
COMMON MEMORY
3-STATE BUFFER
376
17
364
STARAGE DEVICE
MEMORY
NON-VOLATILE MEMORY
SECONDARY PROCESSOR
3-STATE BUFFER
353
365
385
I/O
STORAGE DEVICE CONNECTOR
(MULTI-) MEDIA INTERFACE UNIT
MODULE 1
FILE INTERPRETER
16A
16B
MODULE 2

FIG. 24

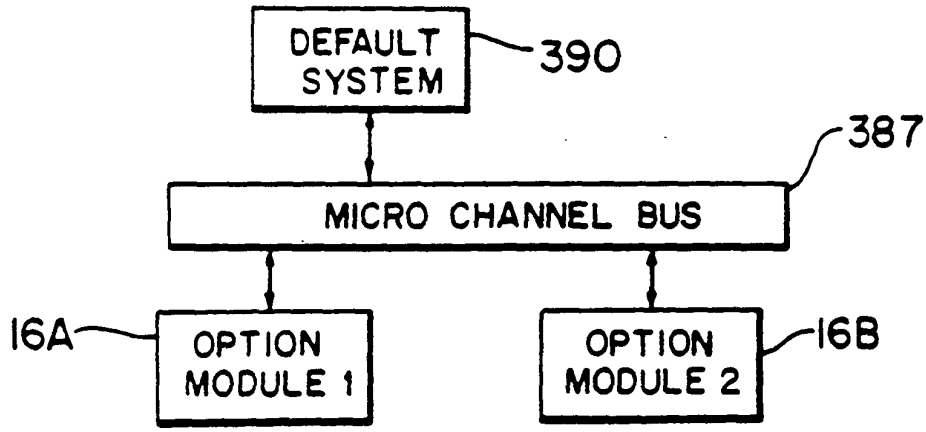

DEFAULT SYSTEM
390
387
MICRO CHANNEL BUS
16A
OPTION MODULE 1
OPTION MODULE 2
16B

FIG. 25

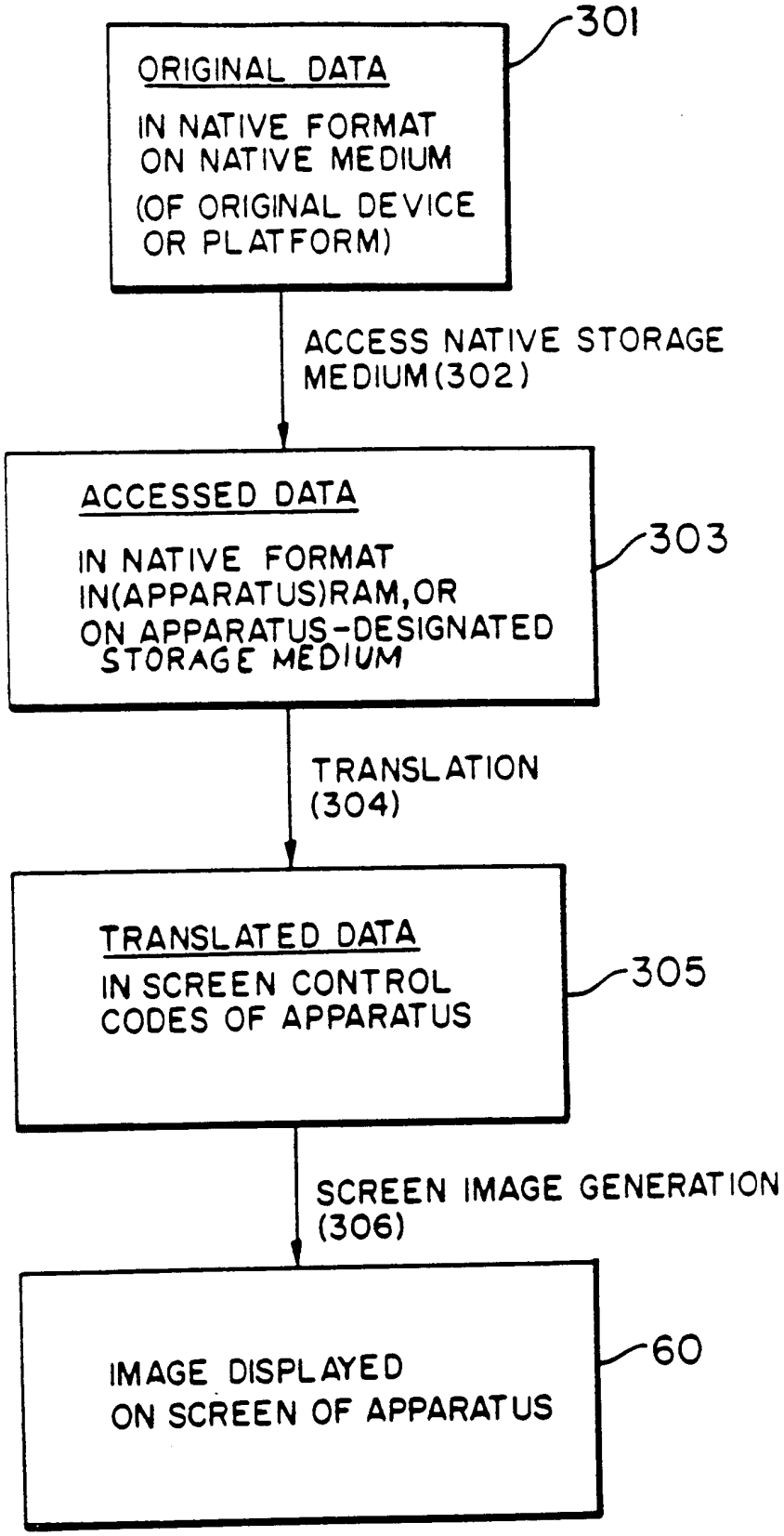

301
ORIGINAL DATA
IN NATIVE FORMAT
ON NATIVE MEDIUM
(OF ORIGINAL DEVICE
OR PLATFORM)
ACCESS NATIVE STORAGE
MEDIUM(302)
ACCESSED DATA
IN NATIVE FORMAT
IN(APPARATUS)RAM,OR
ON APPARATUS-DESIGNATED
STORAGE MEDIUM
303
TRANSLATION
(304)
TRANSLATED DATA
IN SCREEN CONTROL
CODES OF APPARATUS
305
SCREEN IMAGE GENERATION
(306)
IMAGE DISPLAYED
ON SCREEN OF APPARATUS
60

FIG. 26

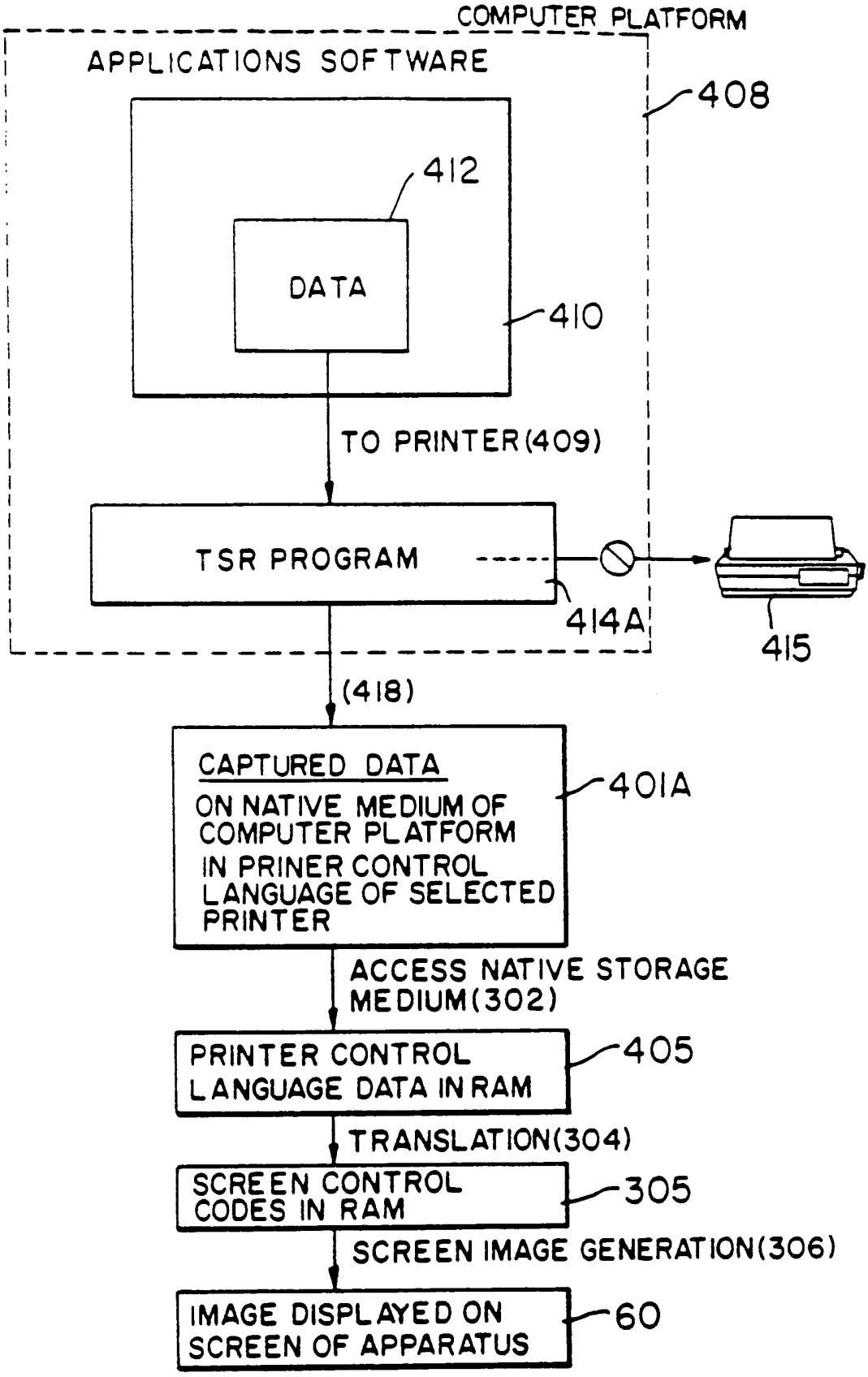

COMPUTER PLATFORM
APPLICATIONS SOFTWARE
408
412
DATA
410
TO PRINTER(409)
TSR PROGRAM
414A
415
(418)
CAPTURED DATA
ON NATIVE MEDIUM OF COMPUTER PLATFORM
IN PRINER CONTROL LANGUAGE OF SELECTED PRINTER
401A
ACCESS NATIVE STORAGE MEDIUM(302)
PRINTER CONTROL LANGUAGE DATA IN RAM
405
TRANSLATION(304)
SCREEN CONTROL CODES IN RAM
305
SCREEN IMAGE GENERATION(306)
IMAGE DISPLAYED ON SCREEN OF APPARATUS
60

FIG. 27

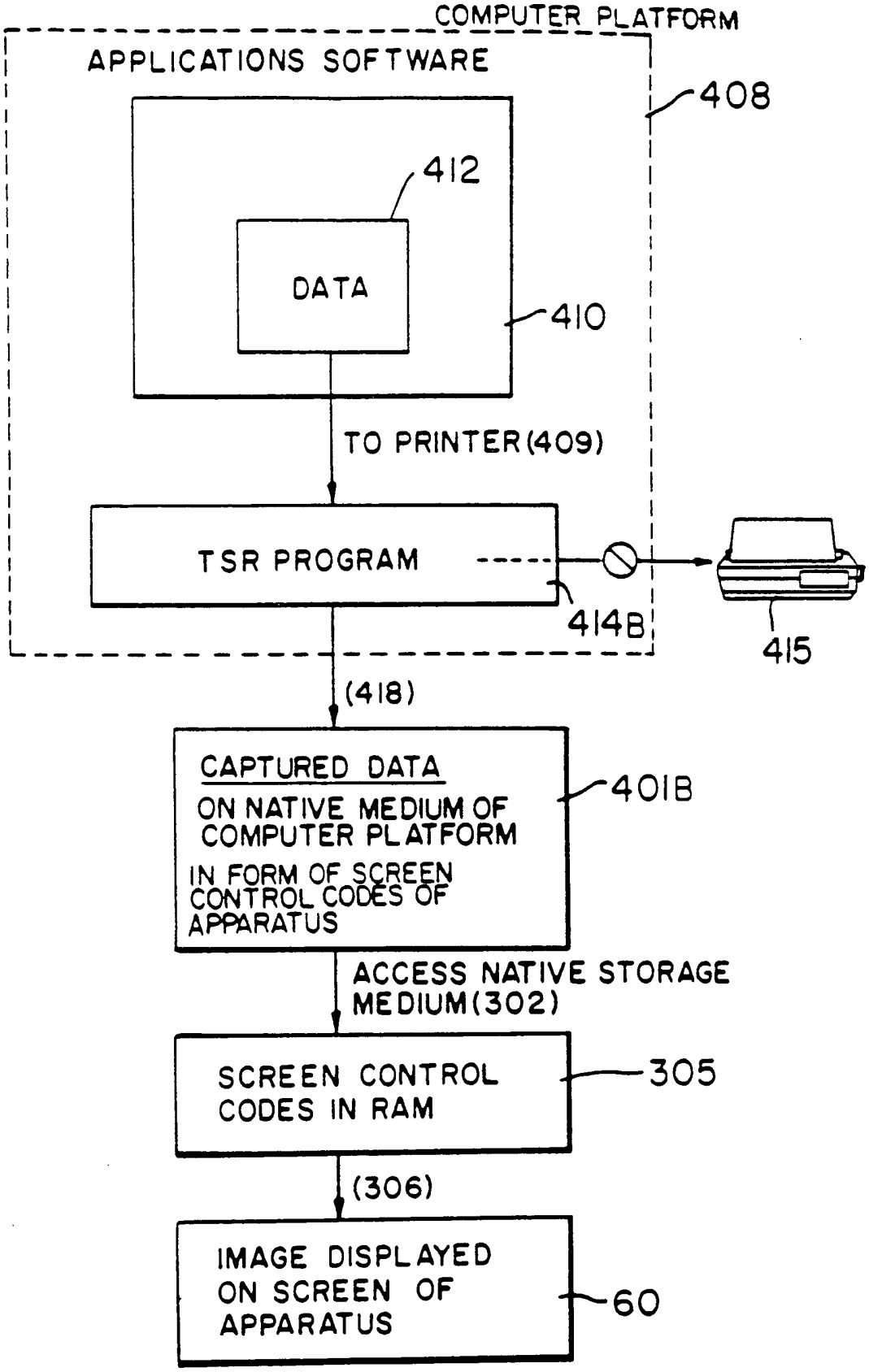

COMPUTER PLATFORM
APPLICATIONS SOFTWARE
408
412
DATA
410
TO PRINTER(409)
TSR PROGRAM
414B
415
(418)
CAPTURED DATA
ON NATIVE MEDIUM OF COMPUTER PLATFORM
IN FORM OF SCREEN CONTROL CODES OF APPARATUS
401B
ACCESS NATIVE STORAGE MEDIUM(302)
SCREEN CONTROL CODES IN RAM
305
(306)
IMAGE DISPLAYED ON SCREEN OF APPARATUS
60

FIG. 28

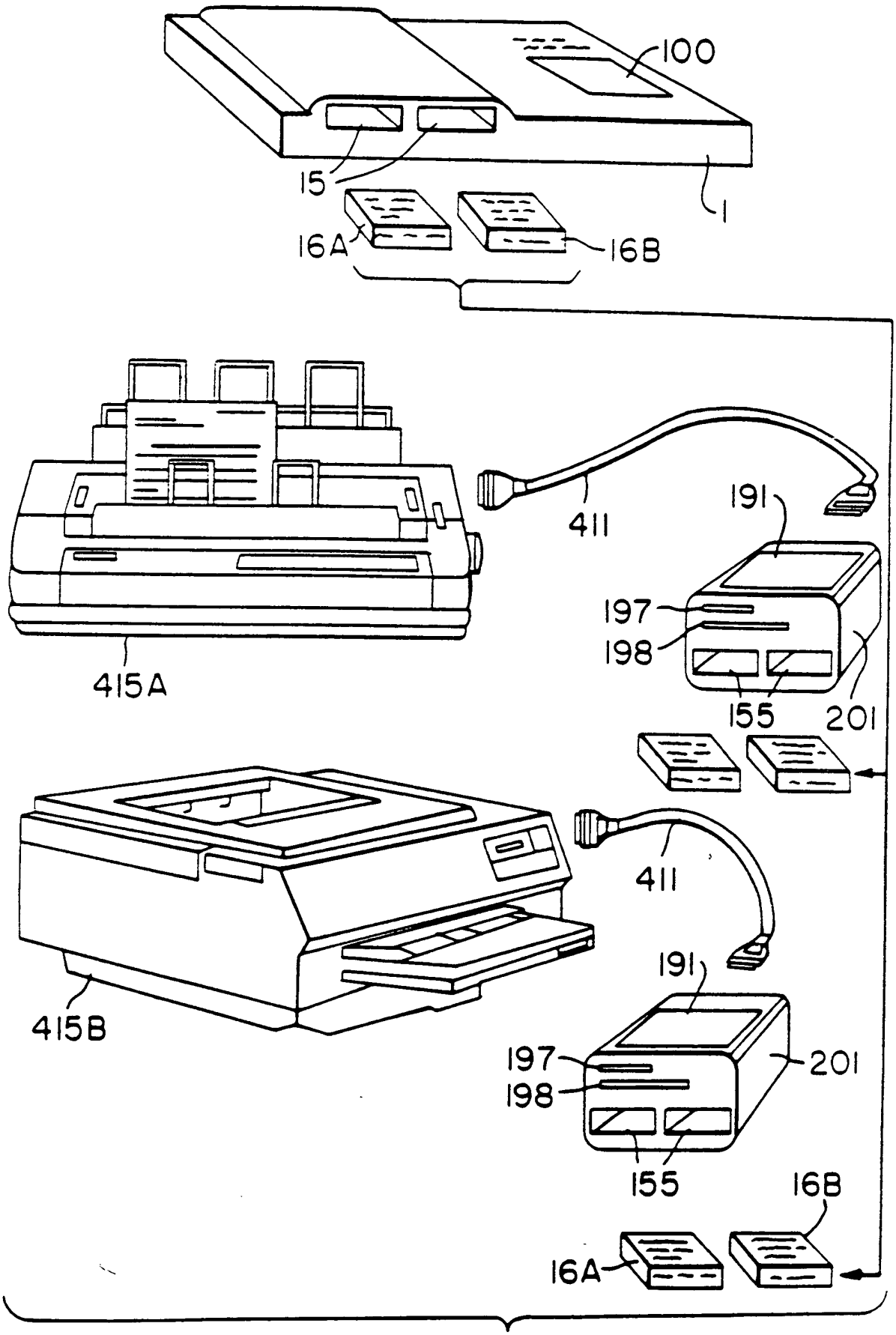

100
15
1
16A
16B
411
191
197
198
155
201
415A
411
191
197
198
201
155
16B
16A
415B

FIG. 29

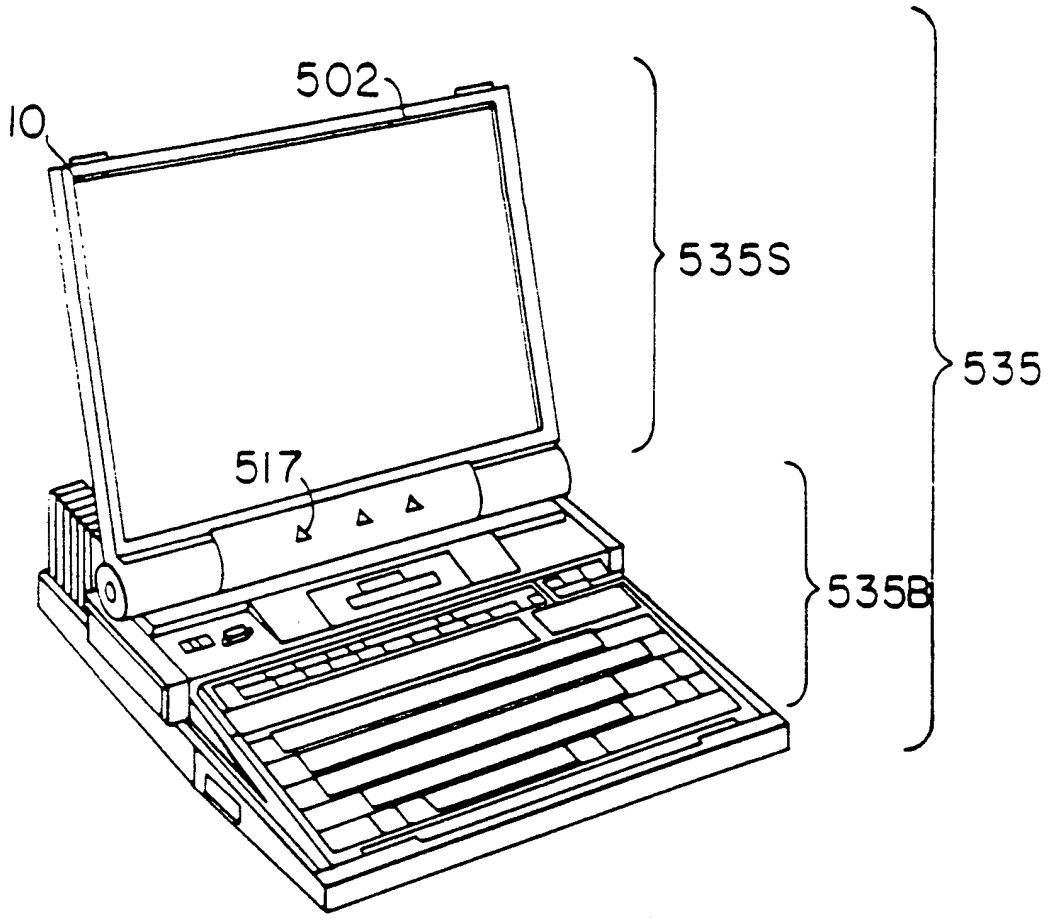


FIG. 30(a)

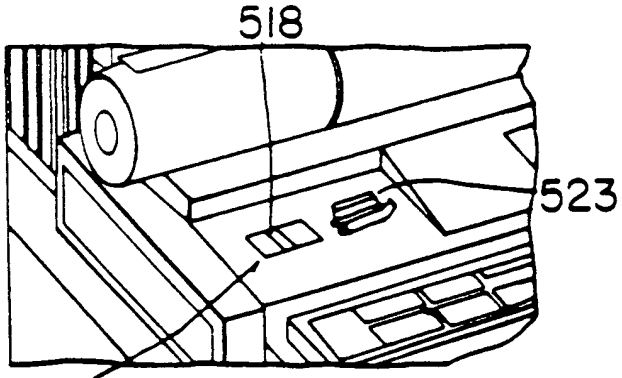


FIG. 30(b)

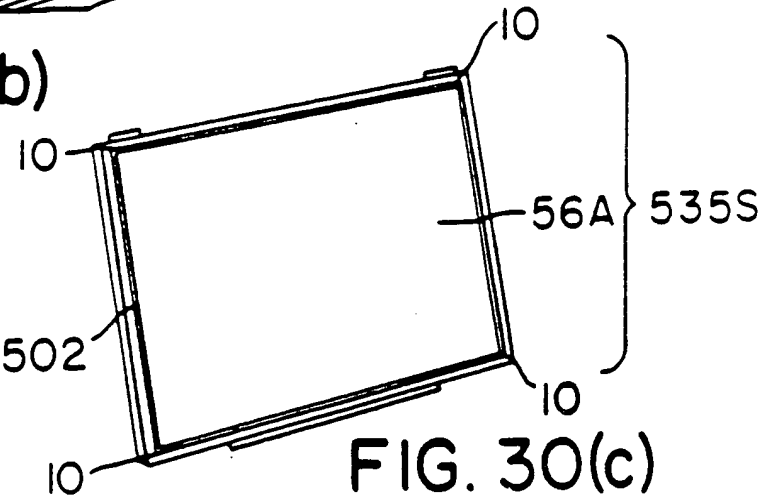


FIG. 30(c)

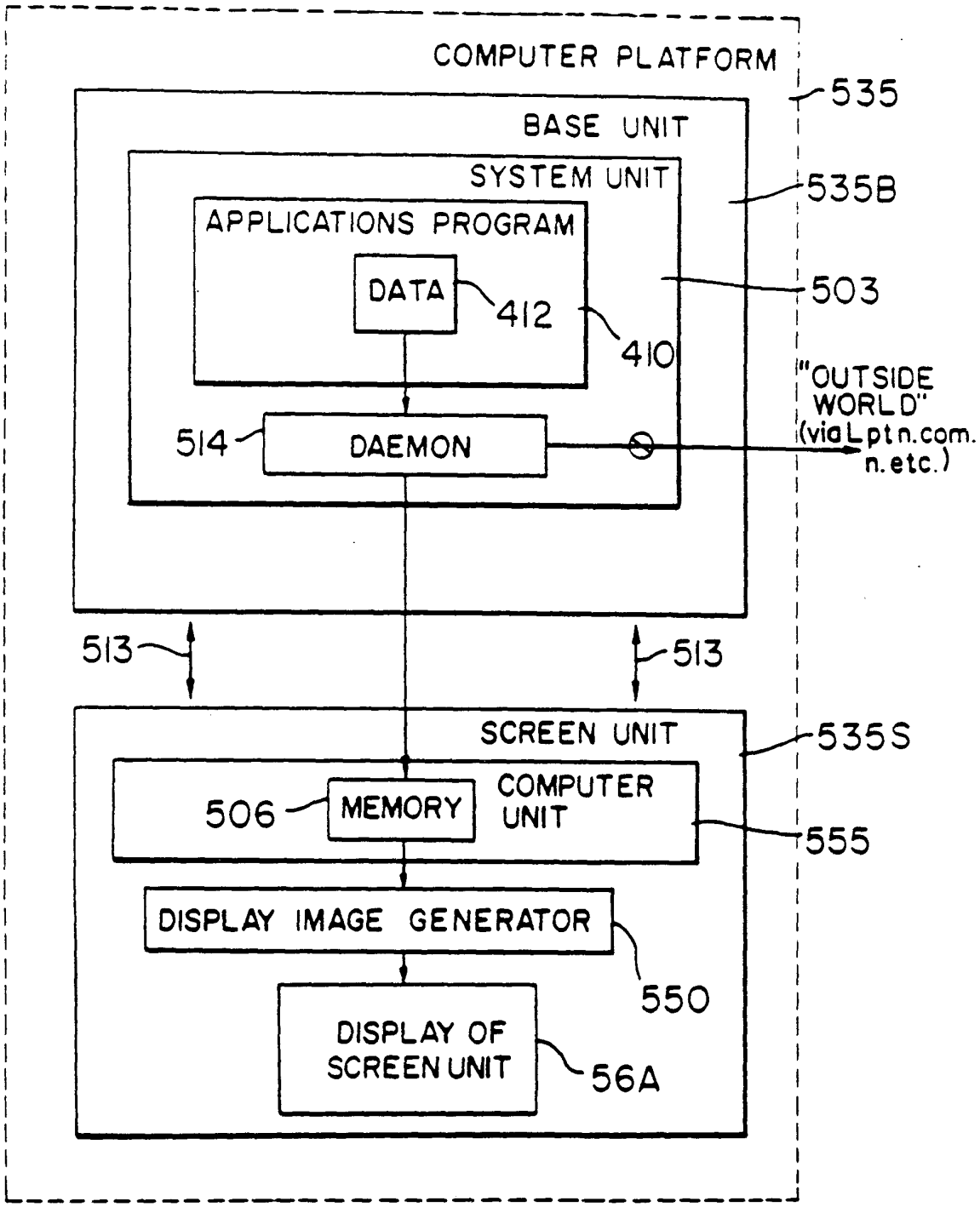

COMPUTER PLATFORM
535
BASE UNIT
SYSTEM UNIT
535B
APPLICATIONS PROGRAM
DATA
412
503
410
"OUTSIDE WORLD" (via Lptn.com. n.etc.)
514
DAEMON
513
513
SCREEN UNIT
535S
506
MEMORY
COMPUTER UNIT
555
DISPLAY IMAGE GENERATOR
550
DISPLAY OF SCREEN UNIT
56A

FIG. 31

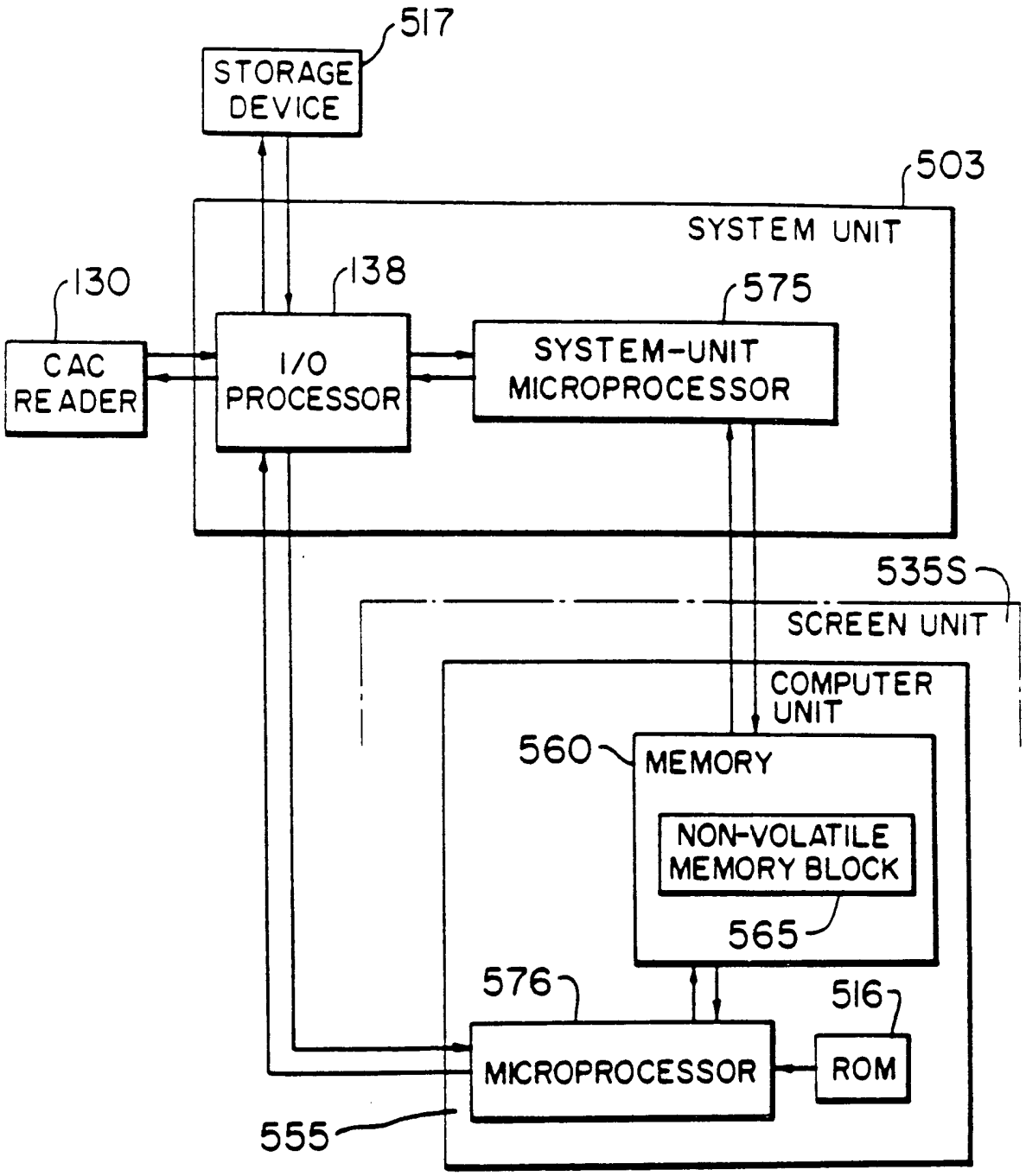

517
STORAGE DEVICE
503
SYSTEM UNIT
130
138
575
CAC READER
I/O PROCESSOR
SYSTEM-UNIT MICROPROCESSOR
535S
SCREEN UNIT
COMPUTER UNIT
560
MEMORY
NON-VOLATILE MEMORY BLOCK
565
576
516
MICROPROCESSOR
ROM
555

FIG. 32

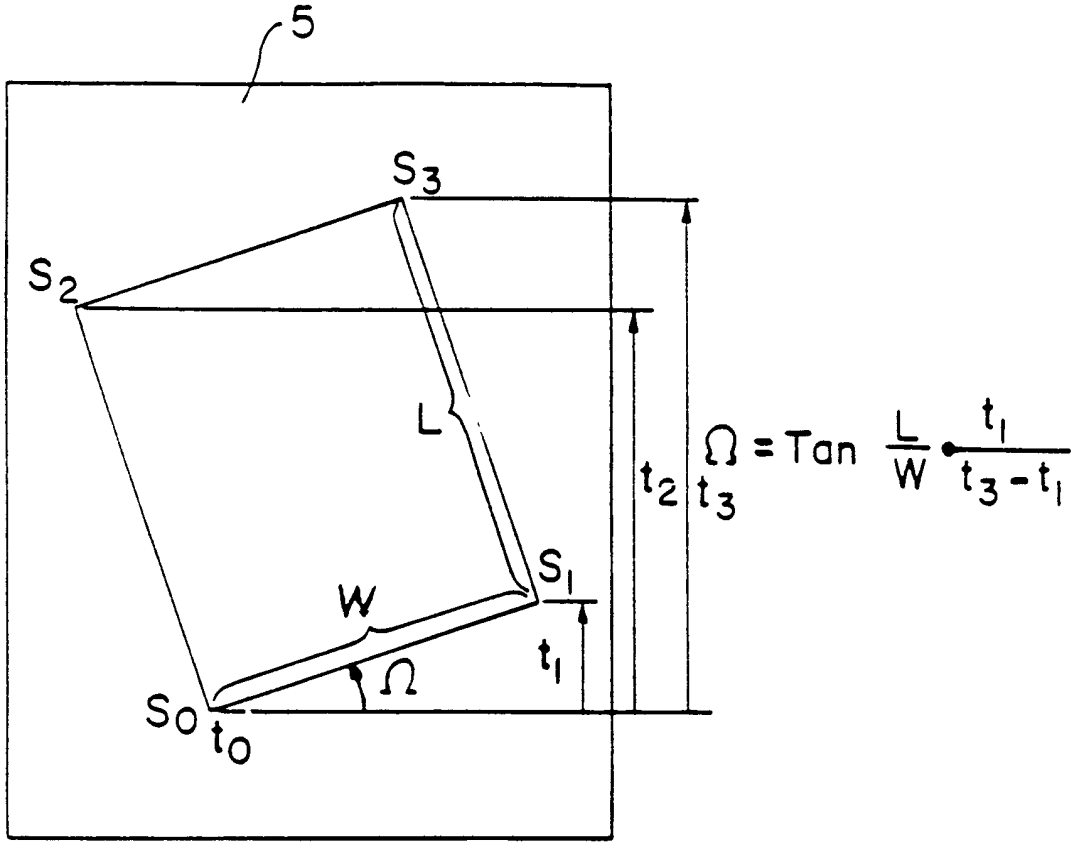


FIG. 33

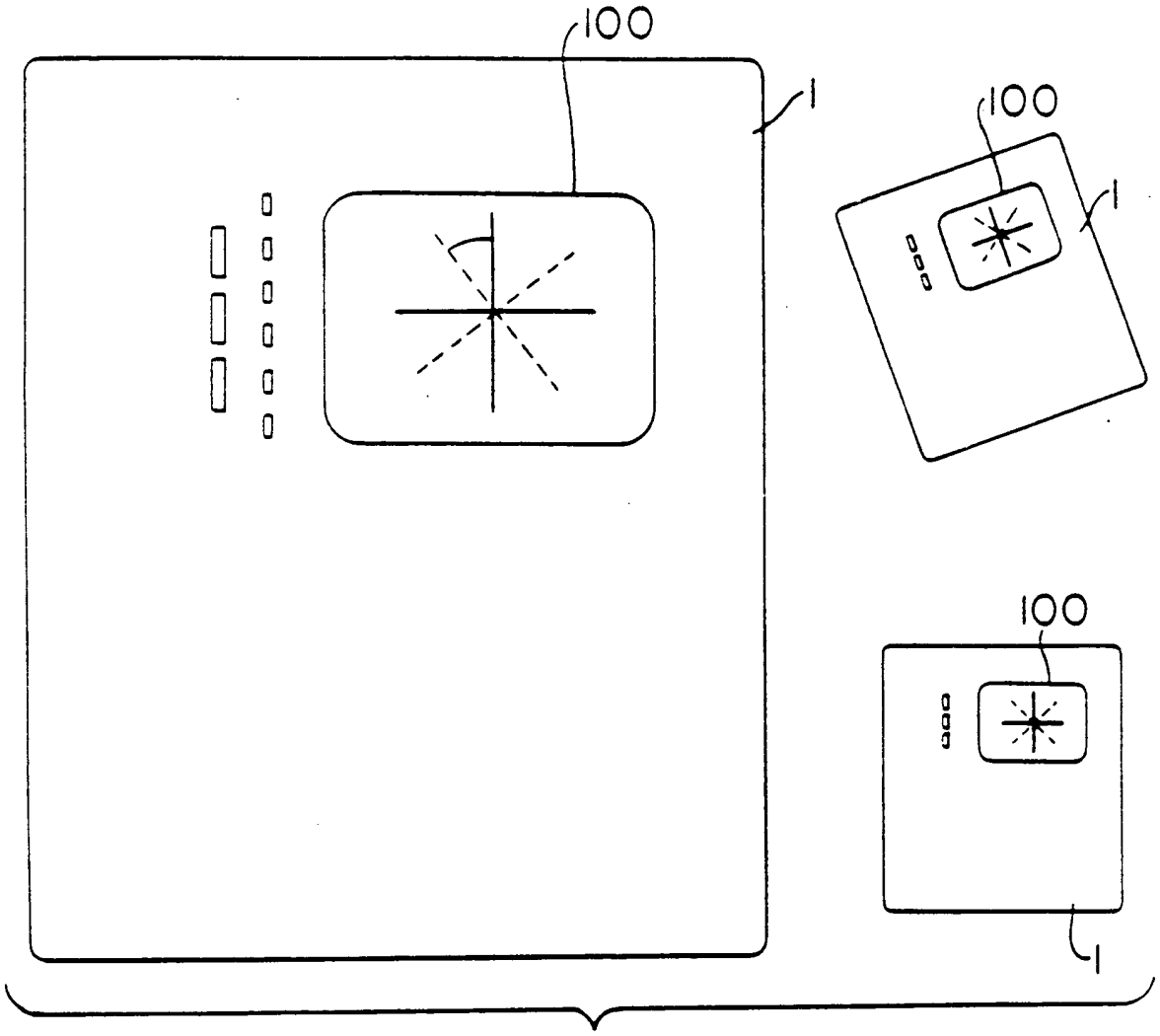


FIG. 34

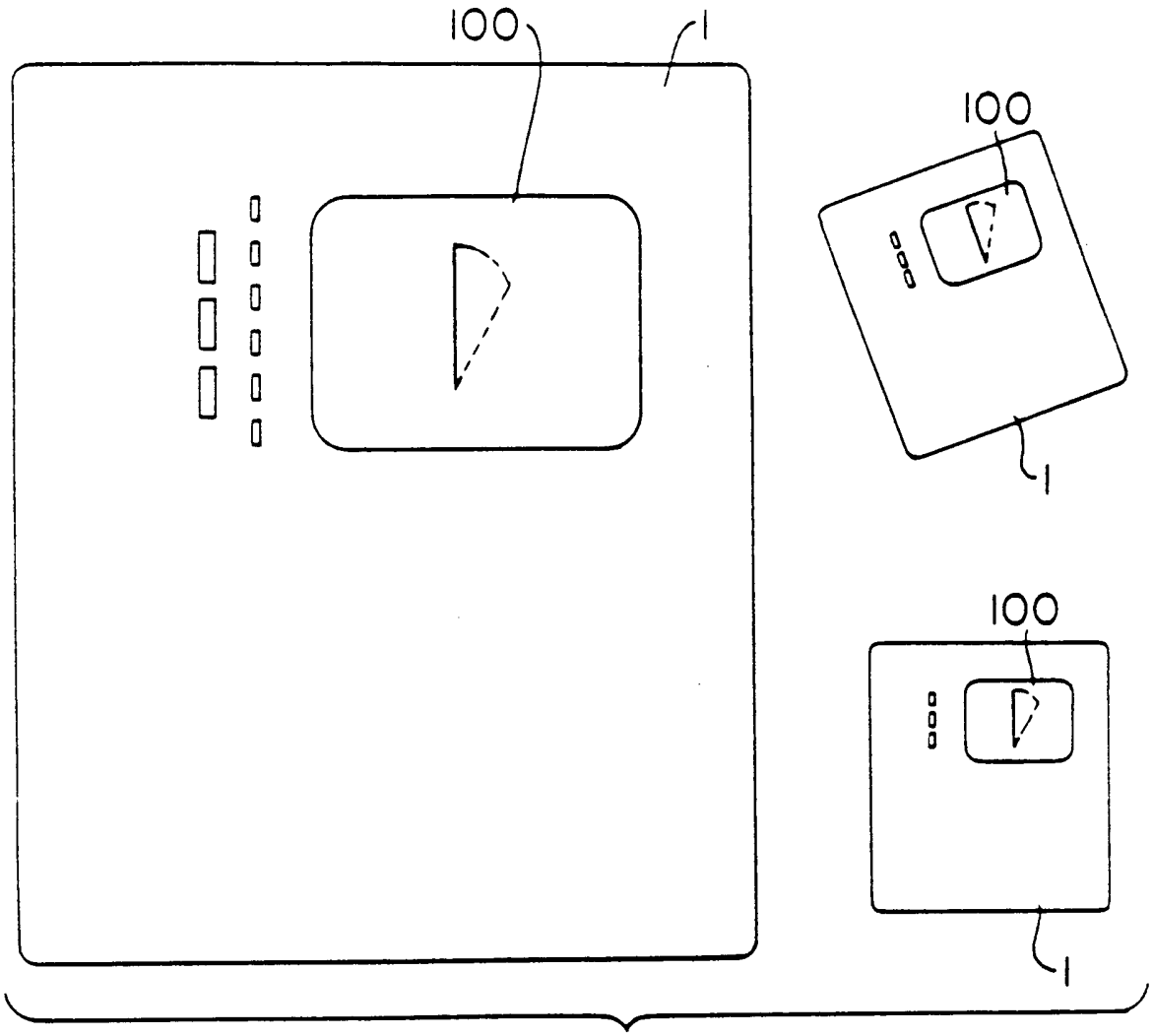


FIG. 35

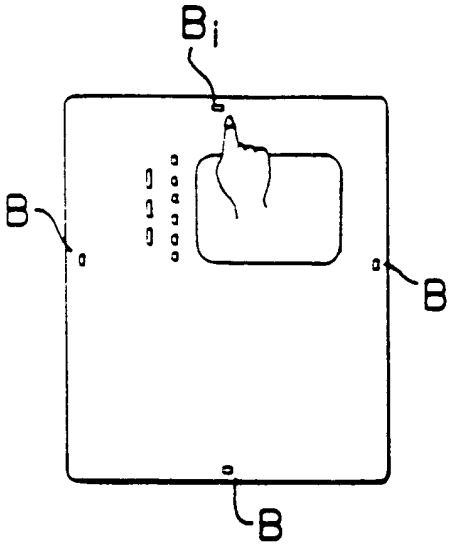


FIG. 36(a)

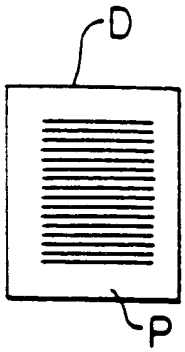


FIG. 36(c)

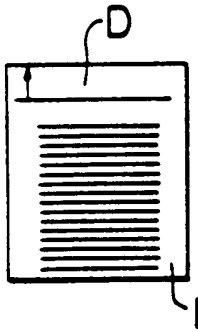


FIG. 36(b)

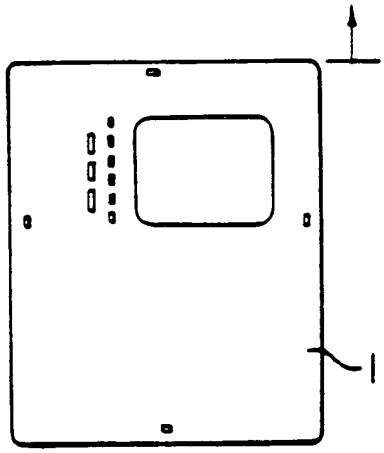


FIG. 36(d)

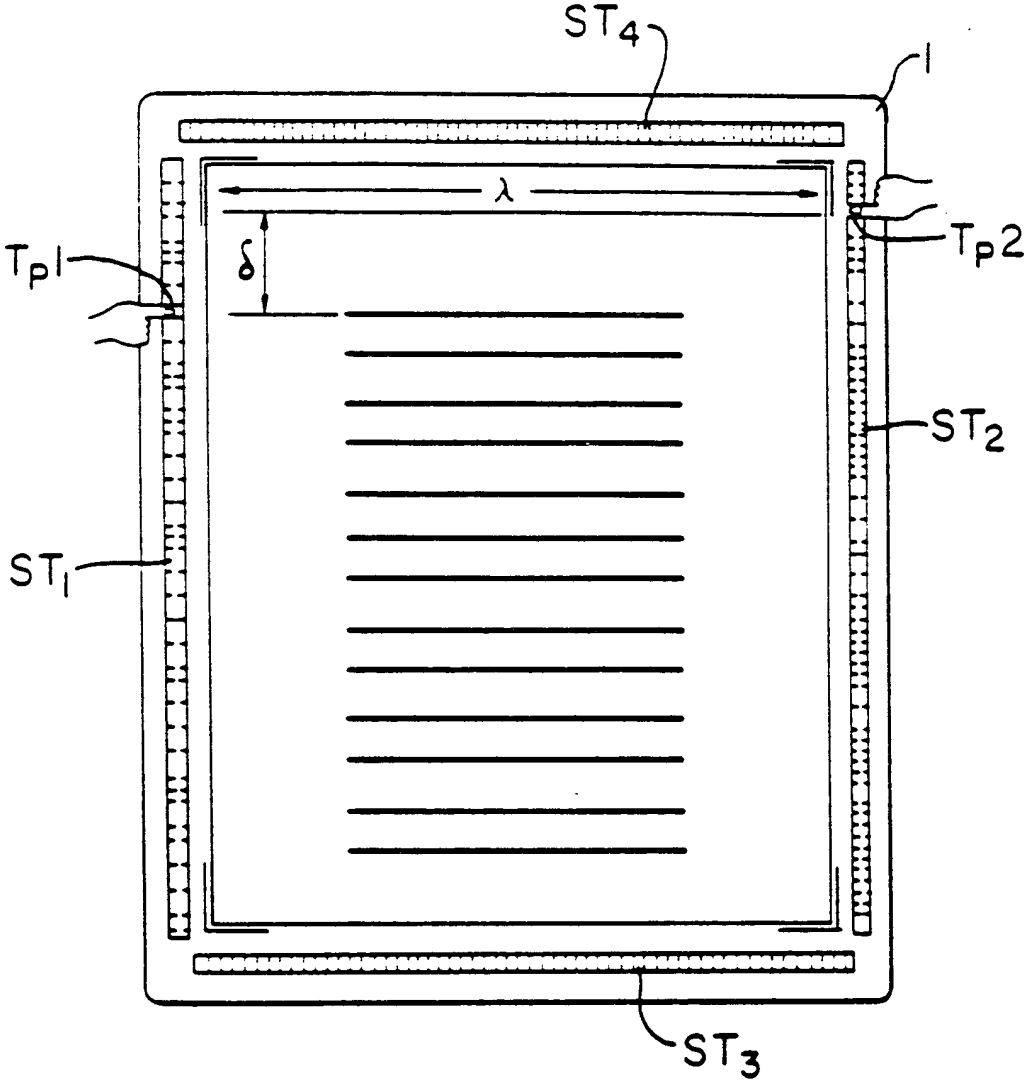


FIG. 37

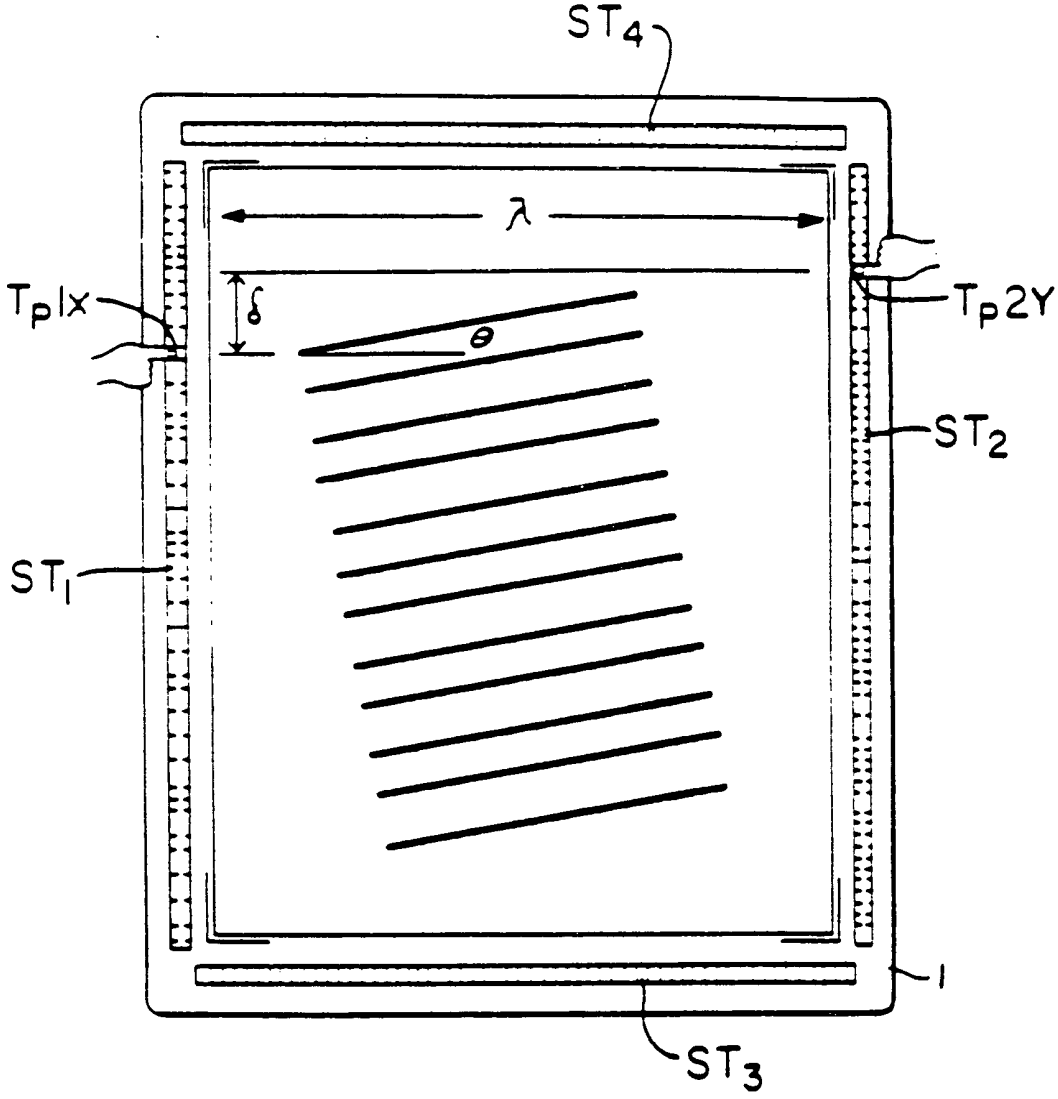


FIG. 38

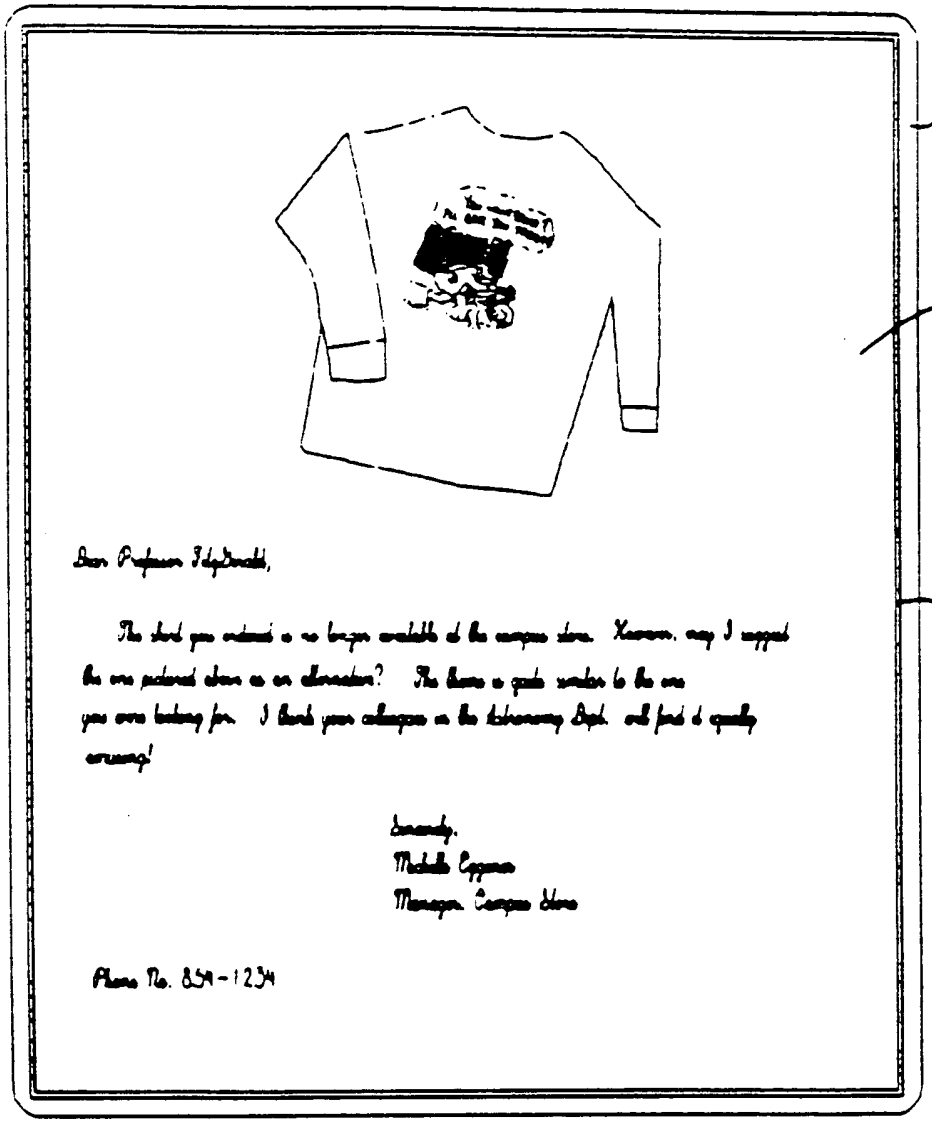


FIG.39

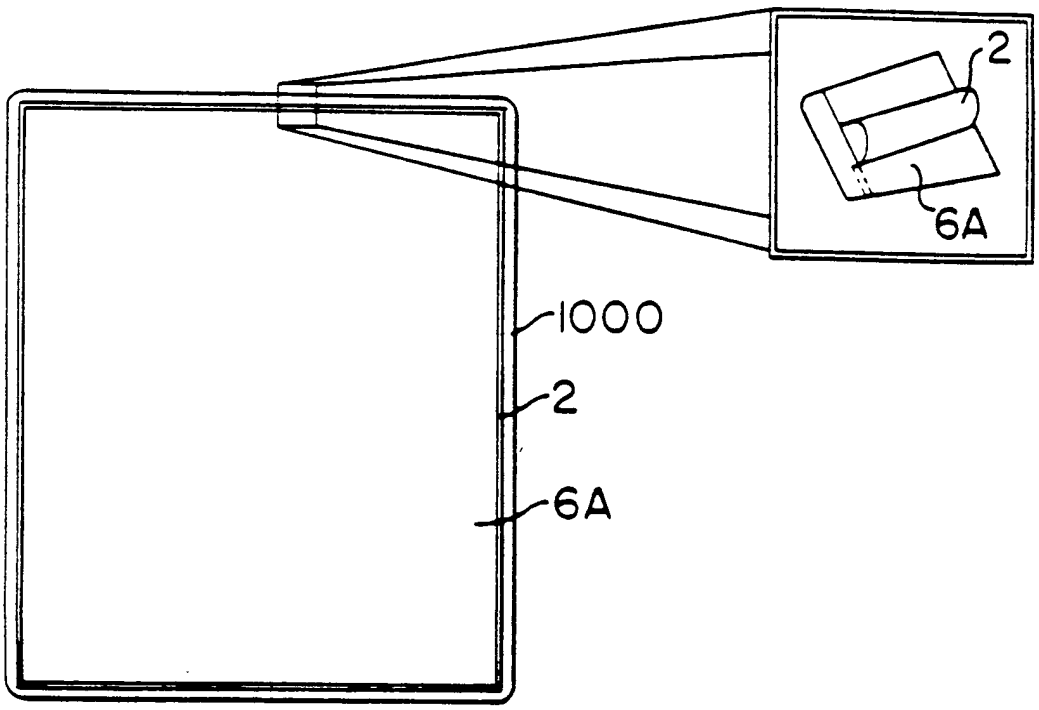


FIG. 40

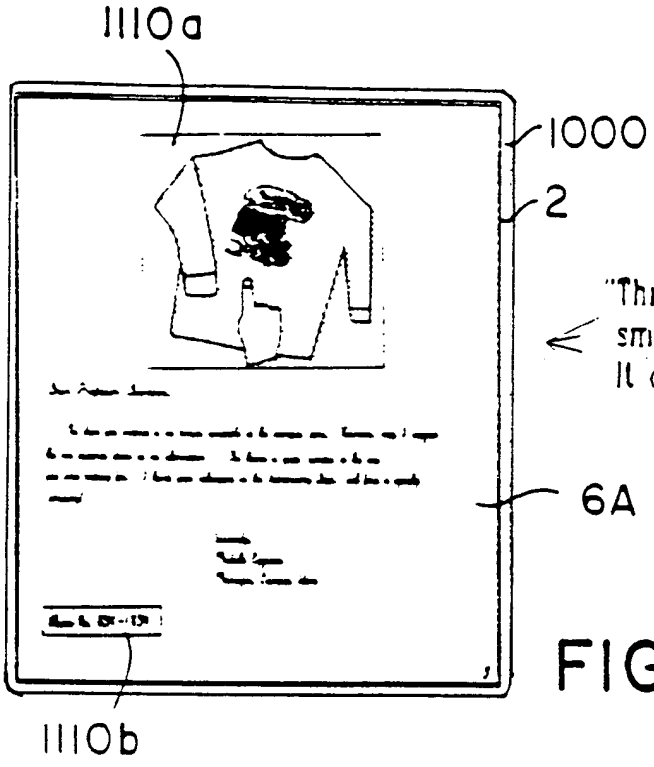


FIG.41(a)

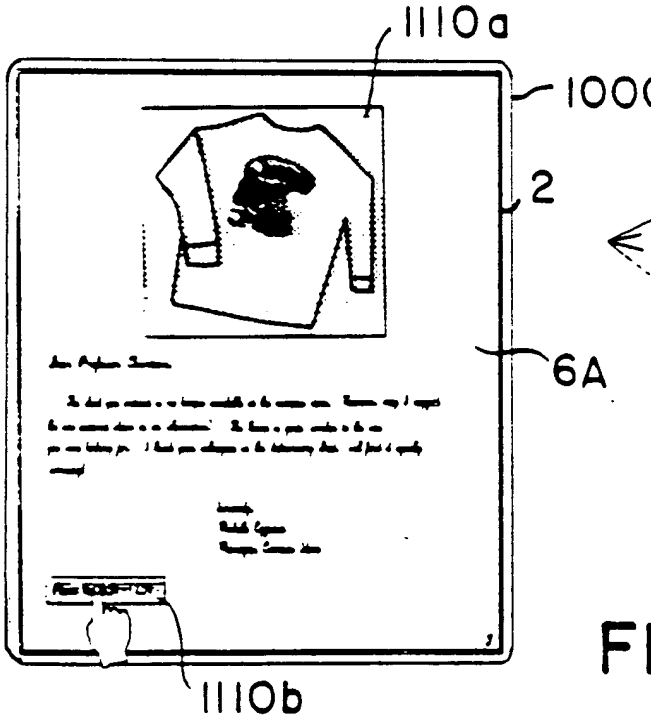


FIG.41(b)

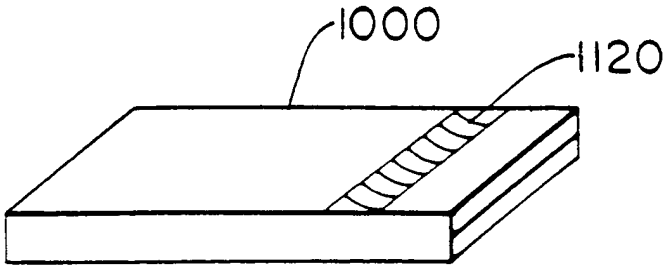


FIG. 42(a)

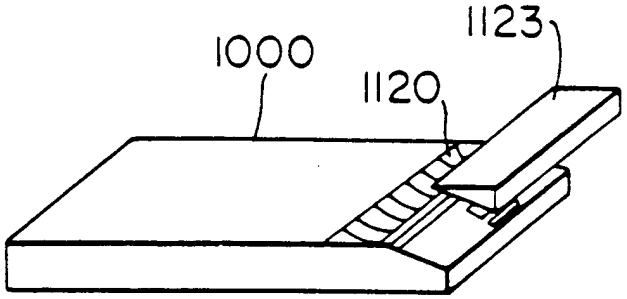


FIG. 42 (b)

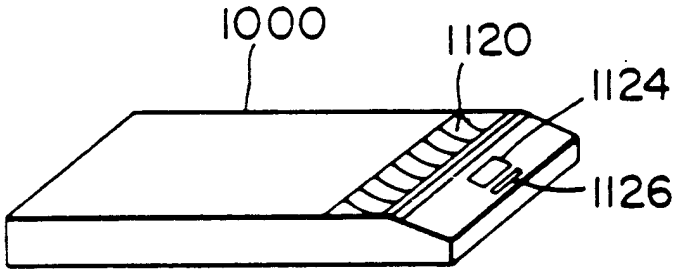


FIG. 42 (c)

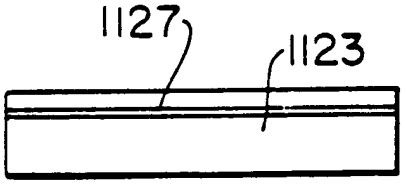


FIG. 42 (d)

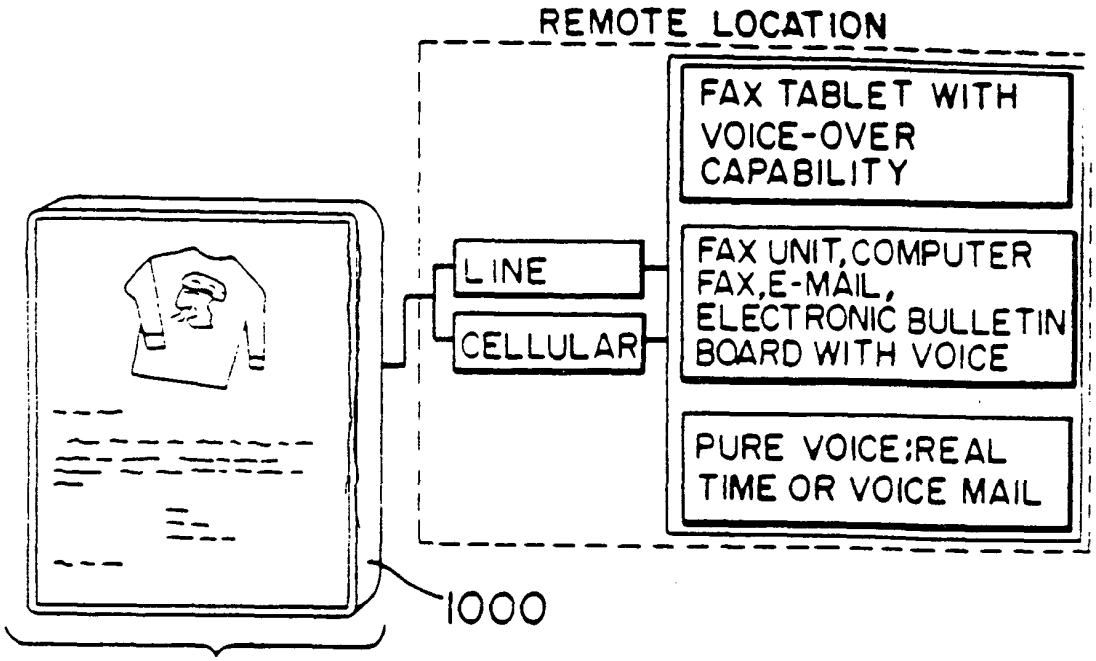


FIG. 43(a)

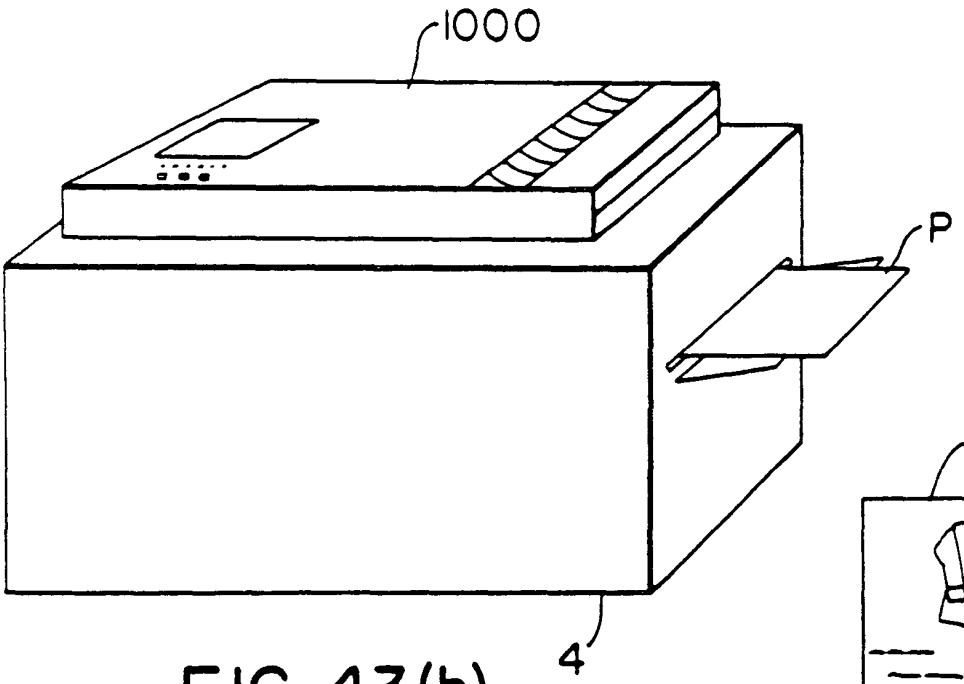


FIG. 43(b)

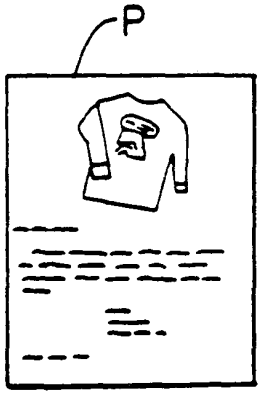


FIG. 43(c)

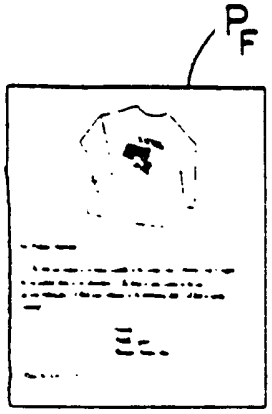


FIG.44(a)

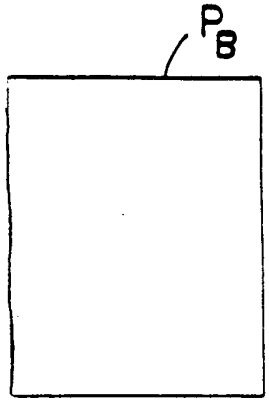


FIG.44(b)

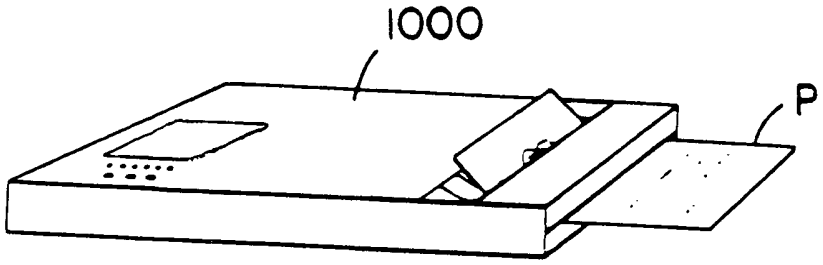


FIG.44(c)

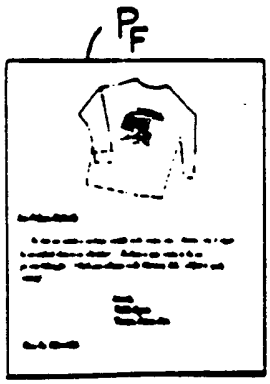


FIG.44(d)

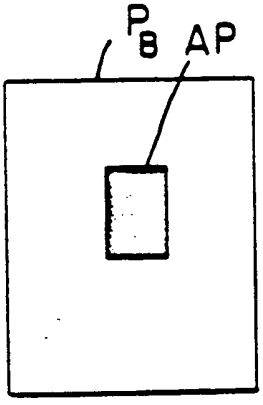


FIG.44(e)

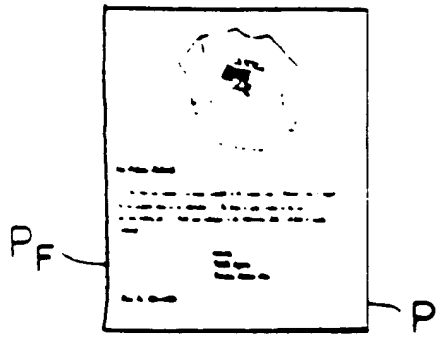


FIG. 45(a)

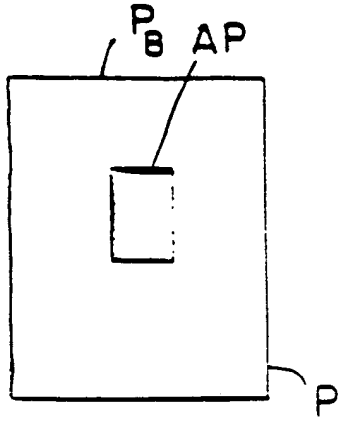


FIG. 45(b)

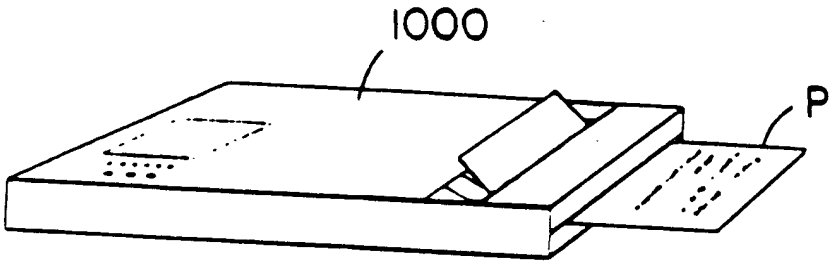


FIG. 45(c)

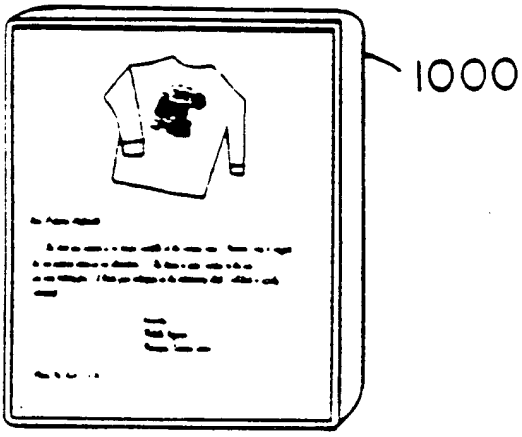


FIG. 45(d)

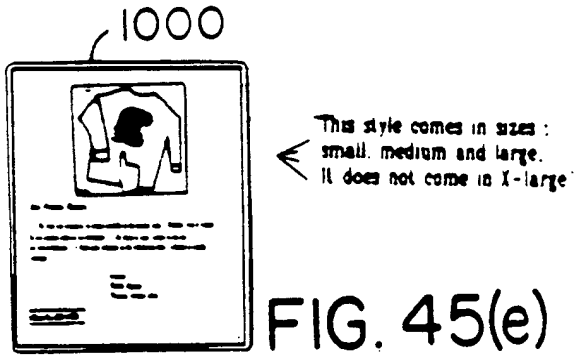


FIG. 45(e)

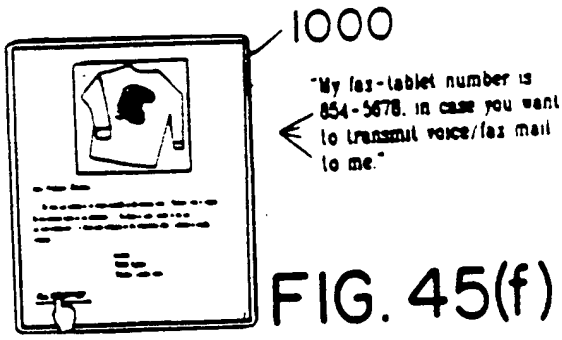


FIG. 45(f)

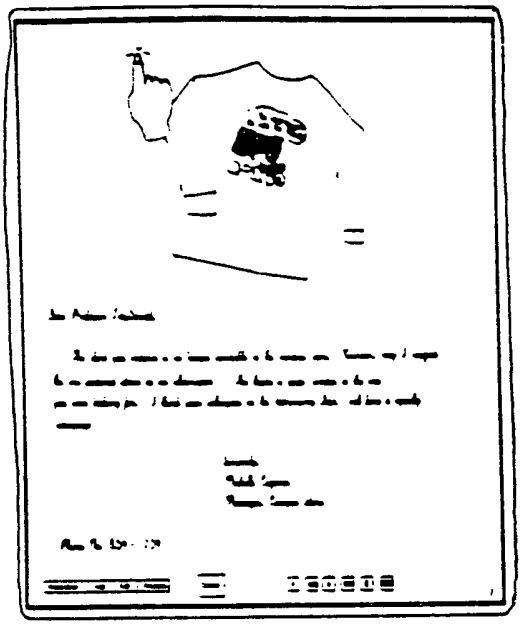


FIG. 46(a)

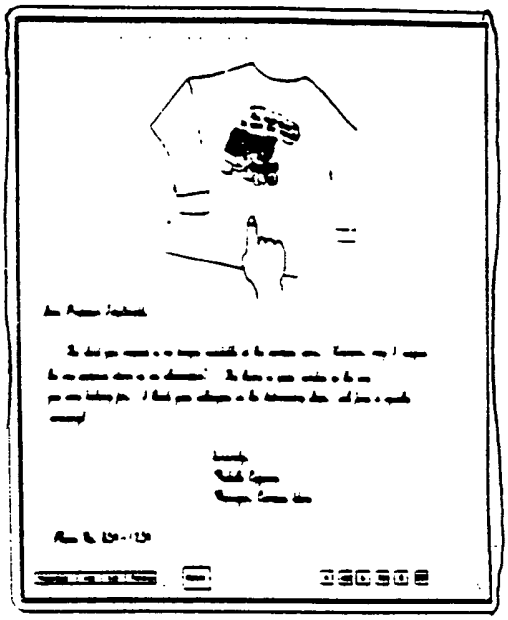


FIG. 46(b)

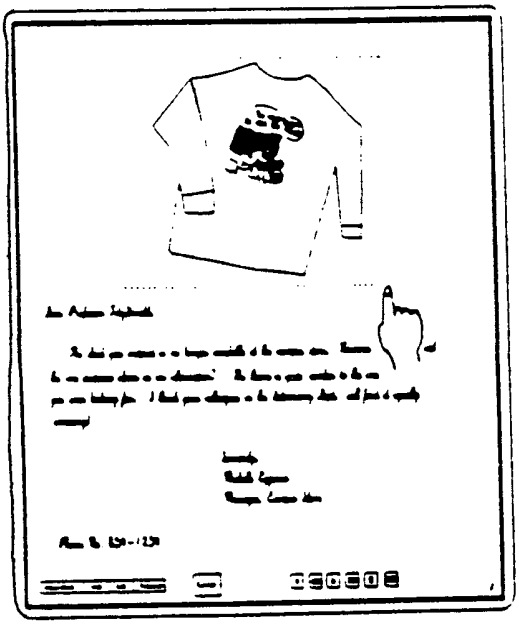


FIG. 46(c)

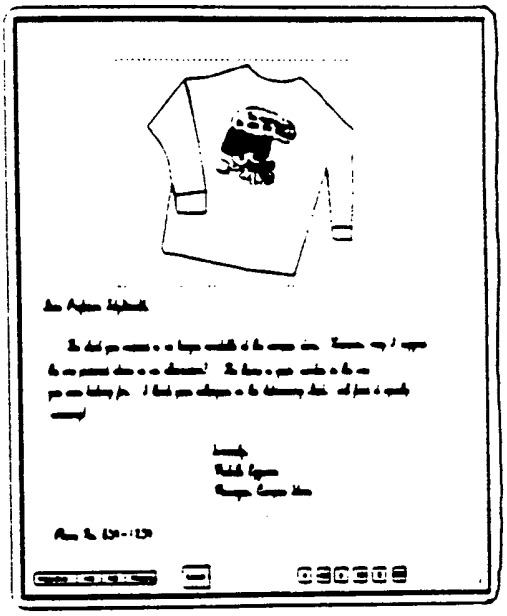


FIG. 46(d)

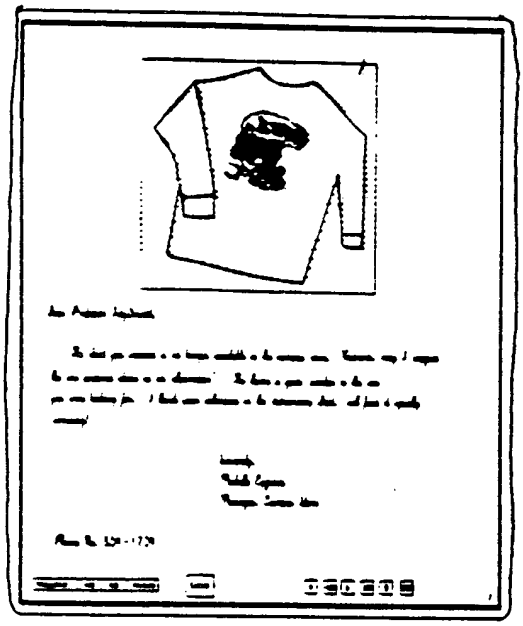


FIG. 47(a)

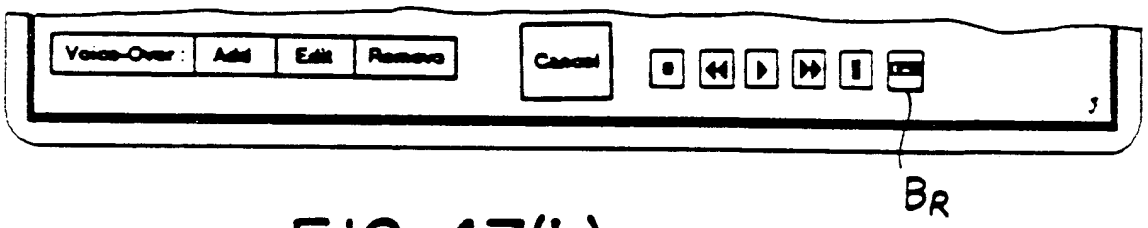


FIG. 47(b)

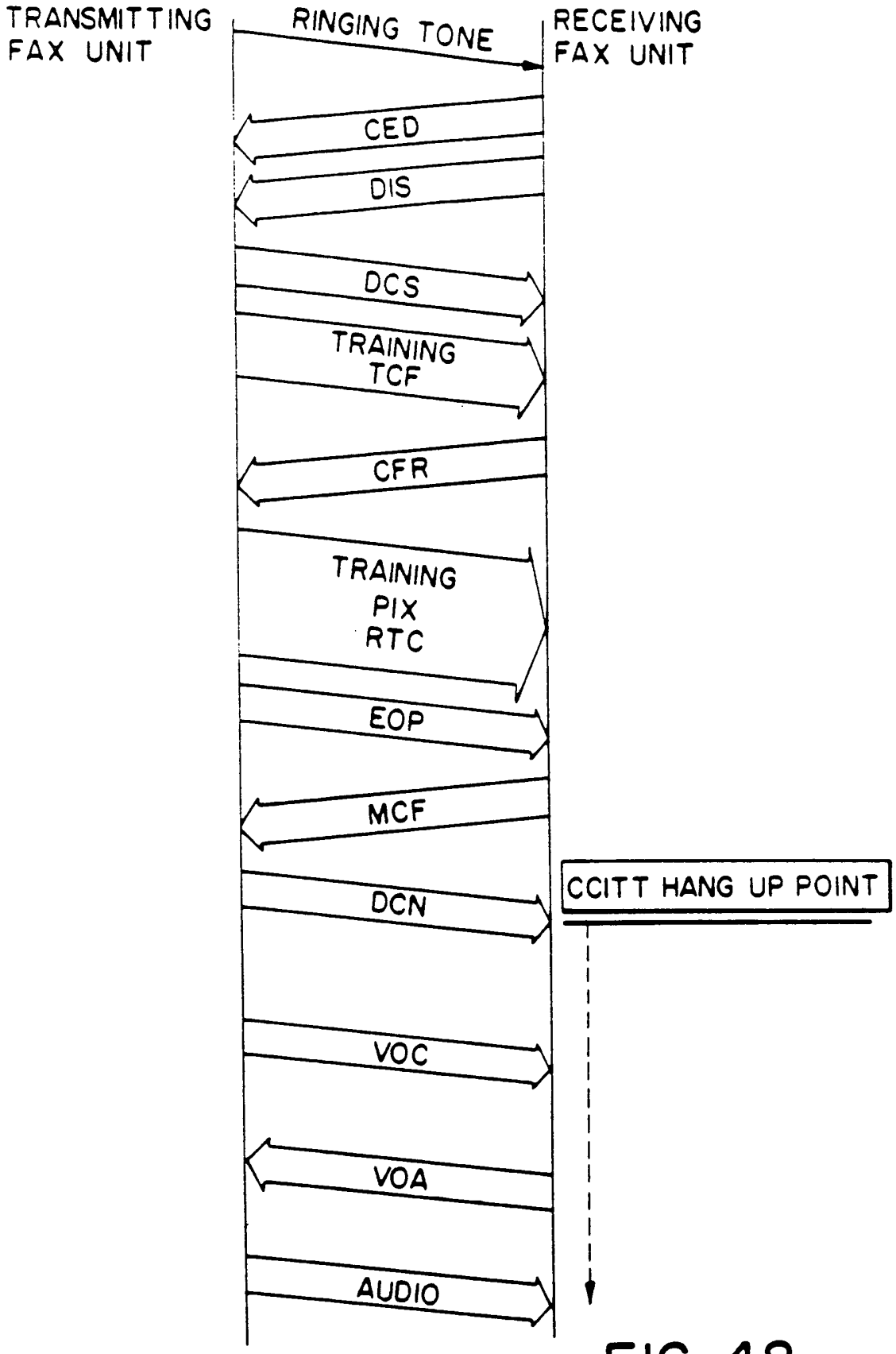

TRANSMITTING FAX UNIT
RINGING TONE
RECEIVING FAX UNIT
CED
DIS
DCS
TRAINING TCF
CFR
TRAINING PIX RTC
EOP
MCF
CCITT HANG UP POINT
DCN
VOC
VOA
AUDIO

FIG. 48

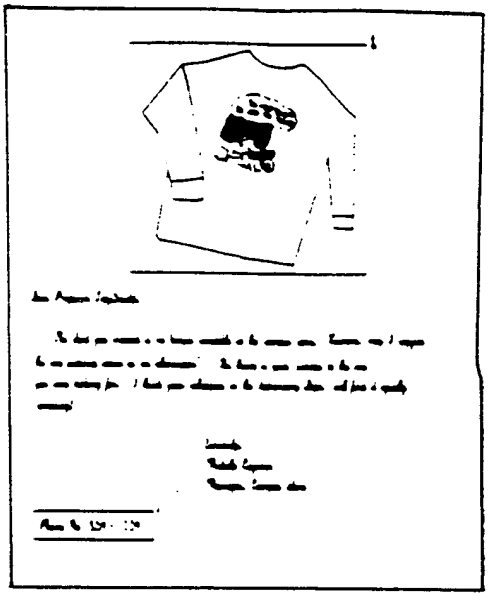


FIG. 49(a)

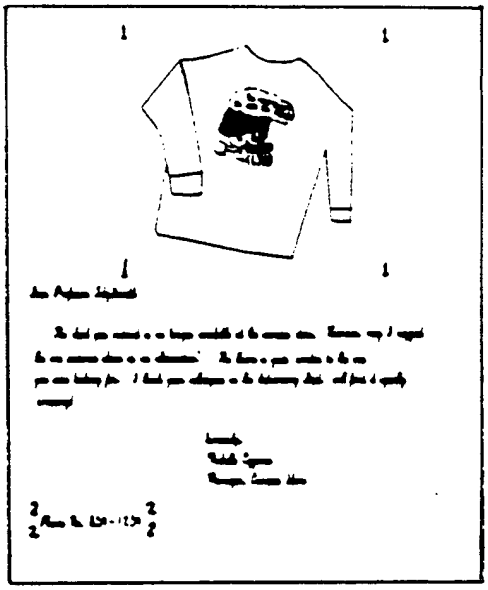
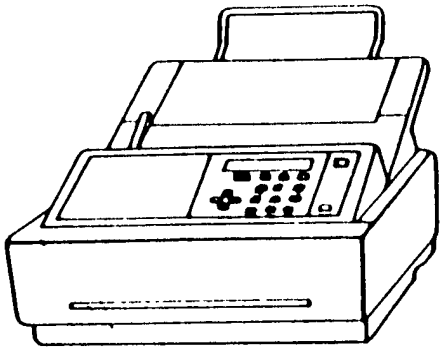
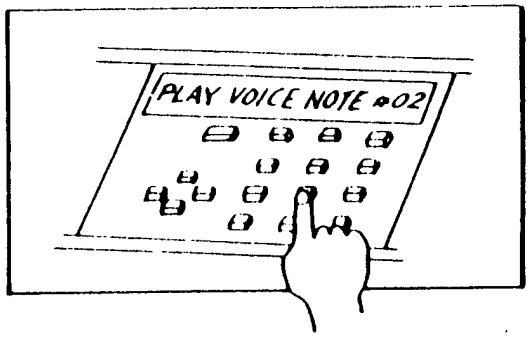


FIG. 49(b)





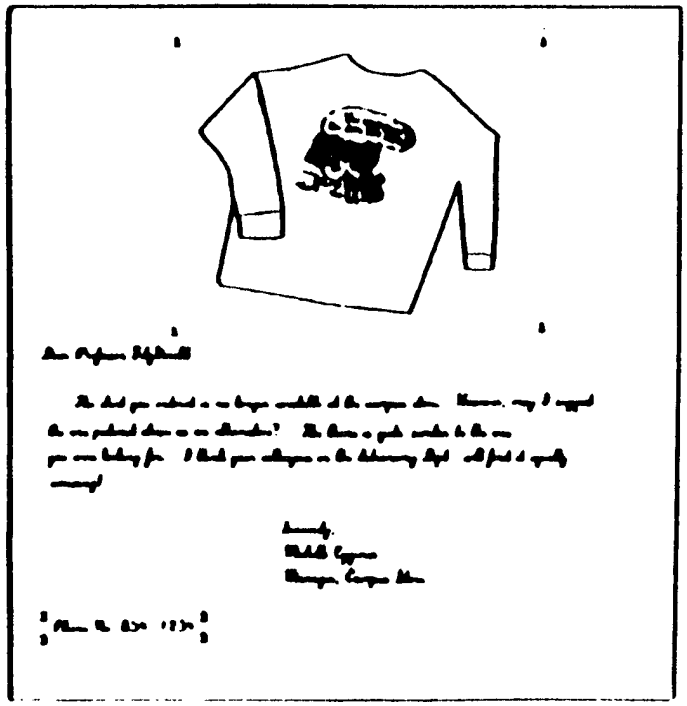


FIG. 50

FIG. 51

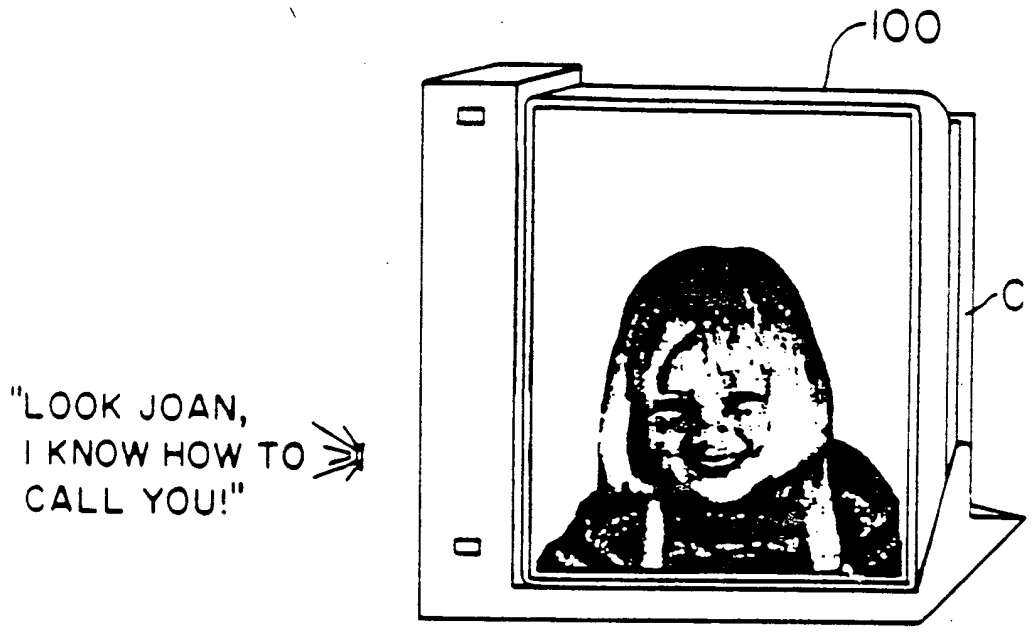


FIG. 52

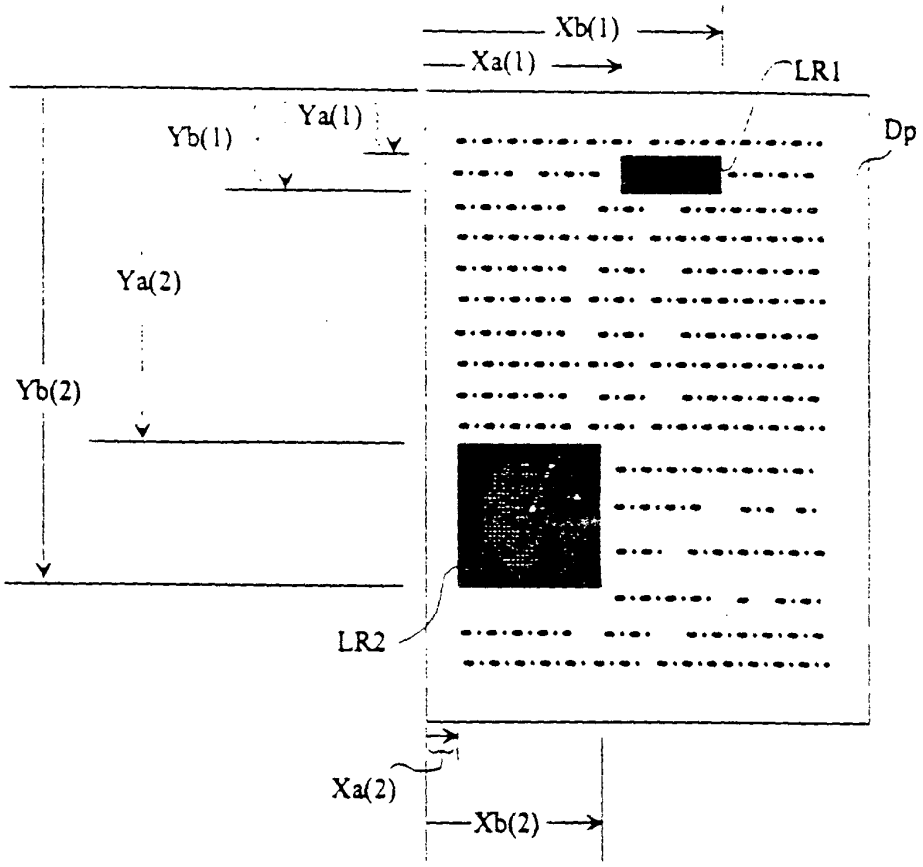


Figure 53

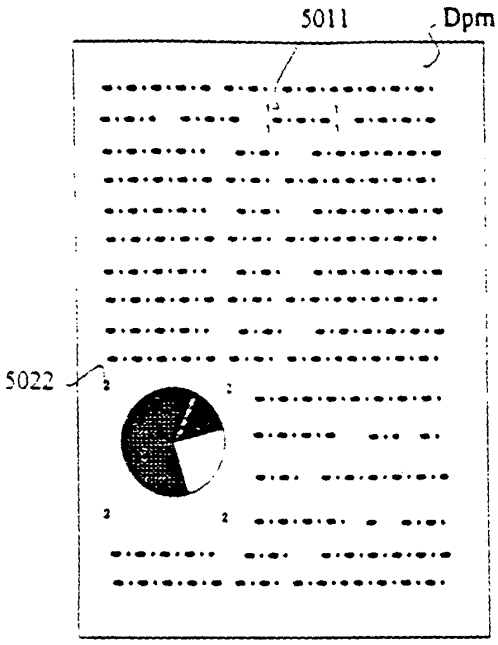


Figure 54(a)

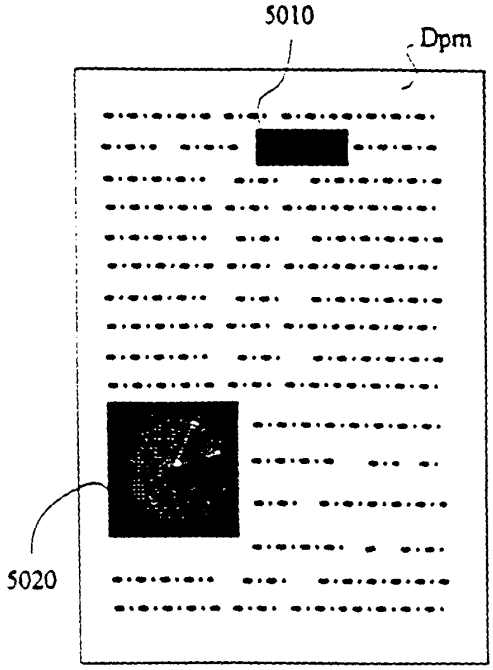


Figure 54(d)

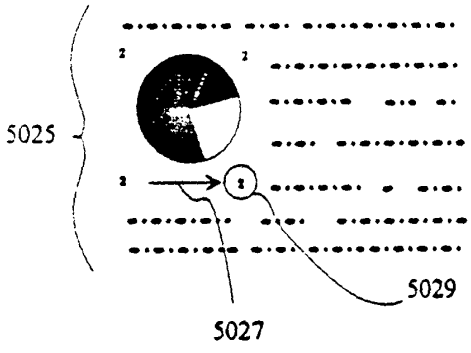


Figure 54(b)

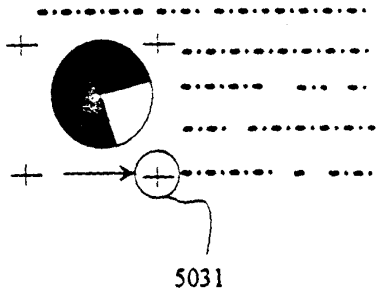


Figure 54(c)

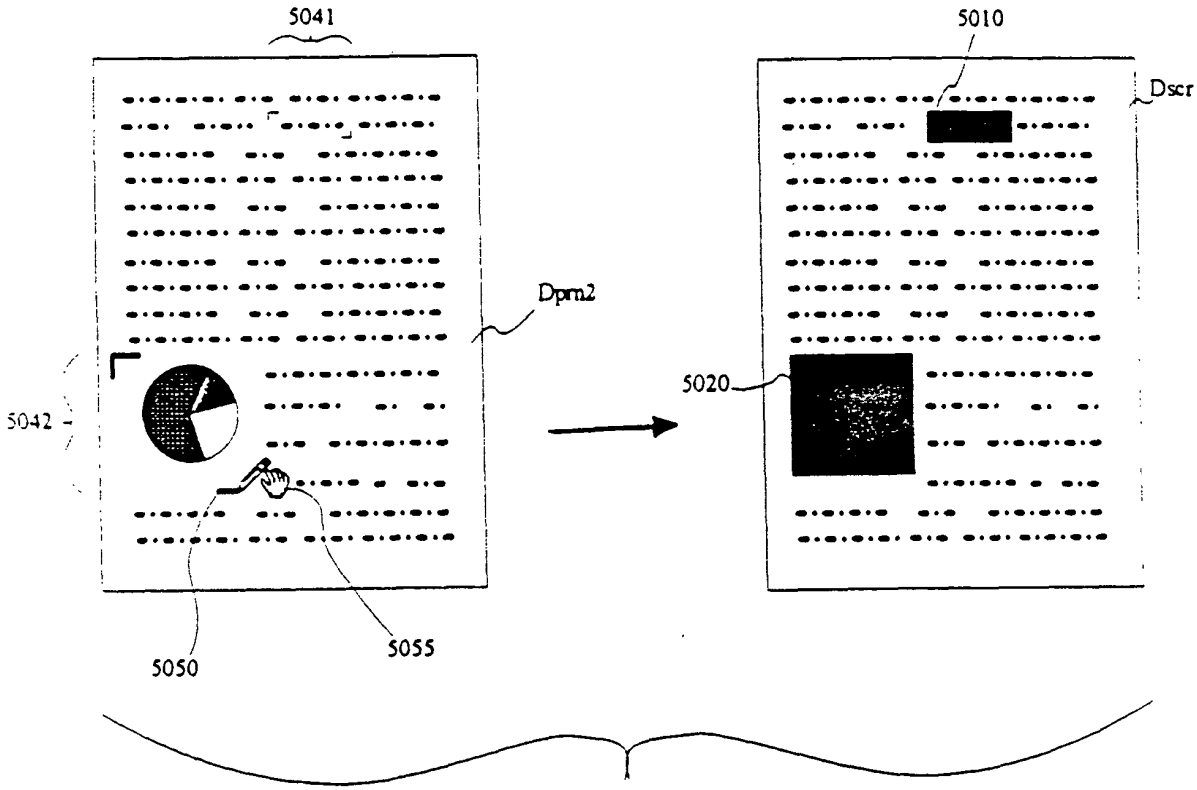


Figure 55

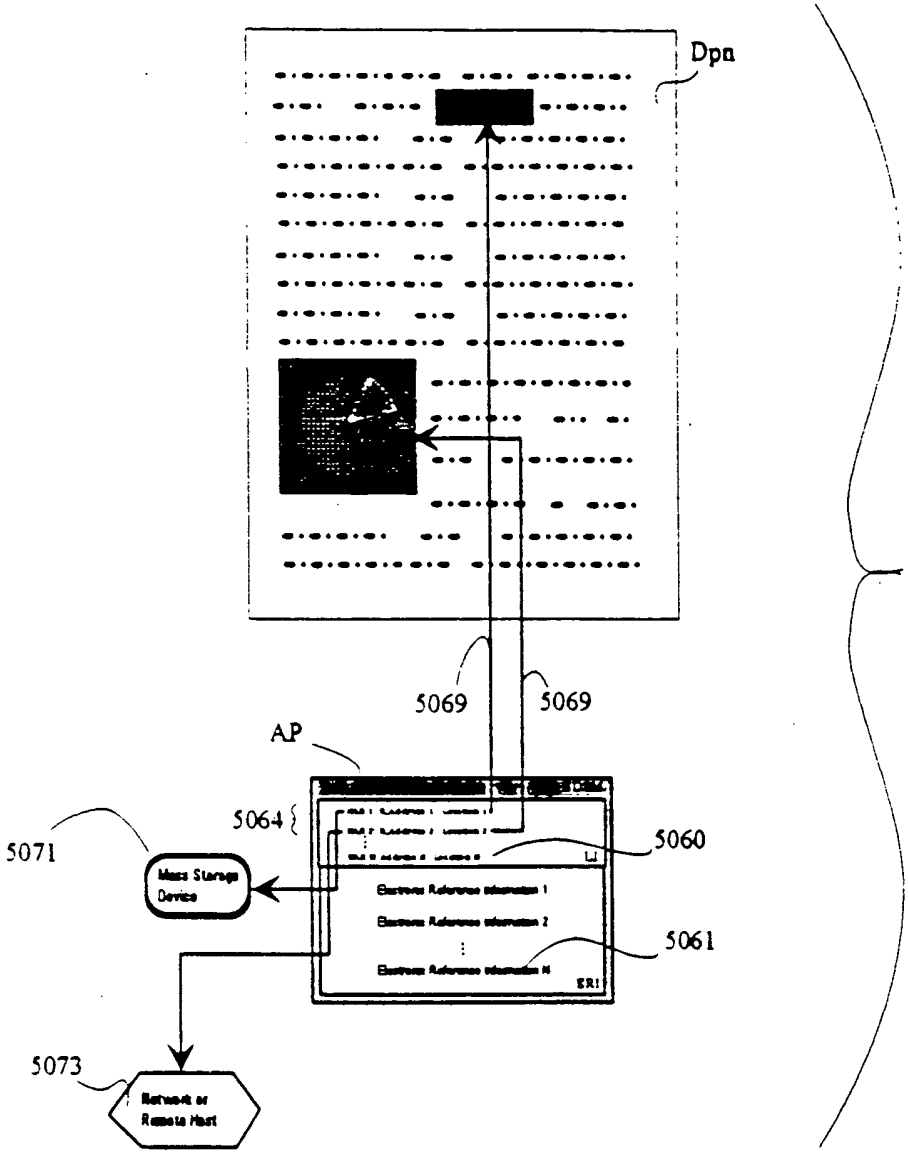


Figure 56(a)

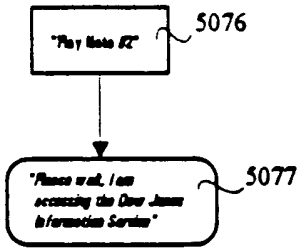


Figure 56(b)

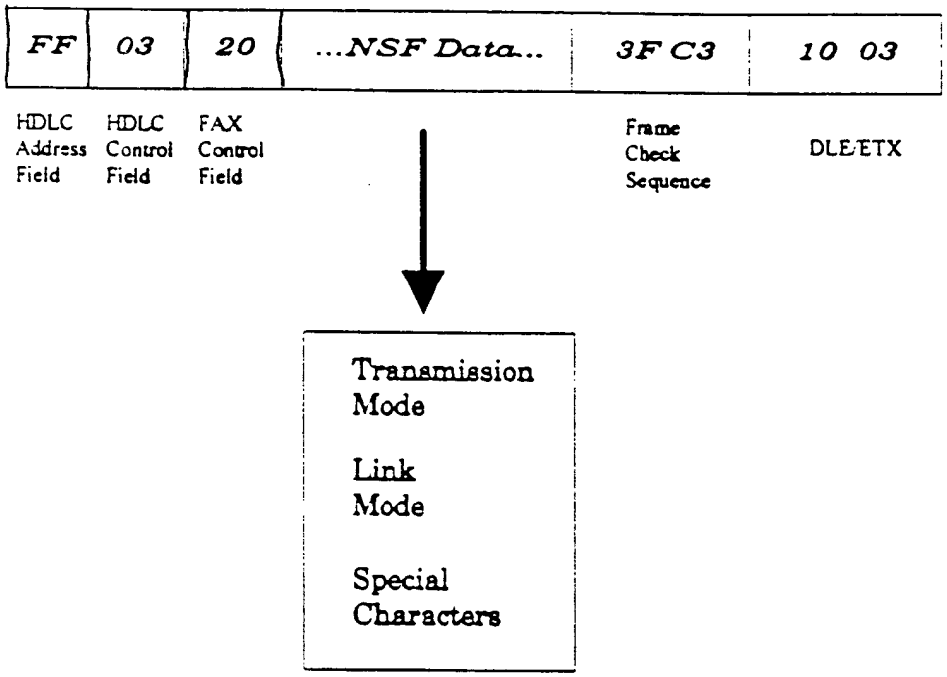

FF
03
20
...NSF Data...
3F C3
10 03
HDLC Address Field
HDLC Control Field
FAX Control Field
Frame Check Sequence
DLE/ETX
Transmission Mode
Link Mode
Special Characters

Figure 57

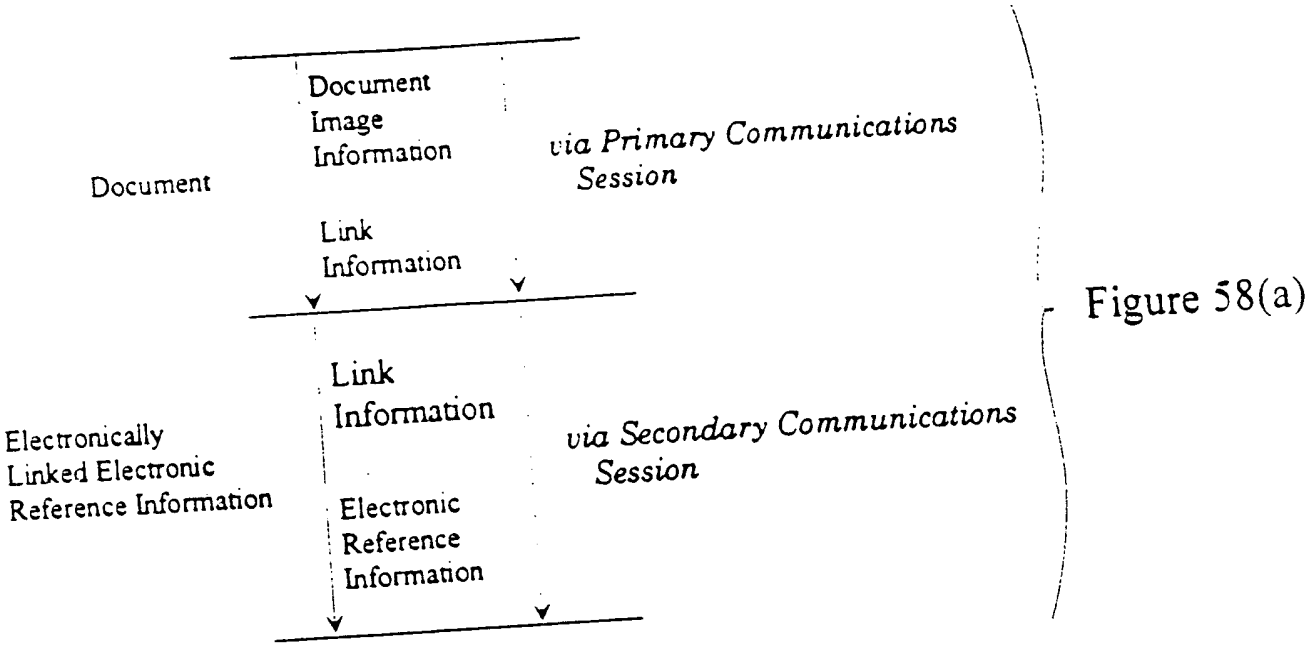


Figure 58(a)

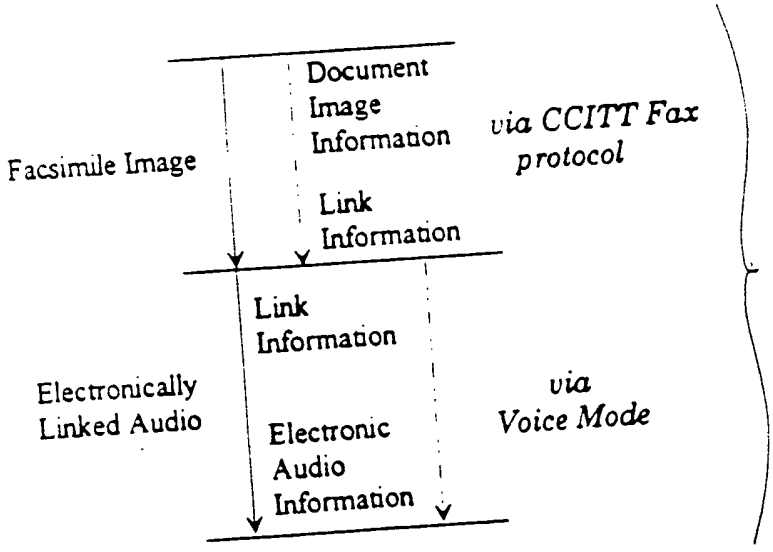


Figure 58(b)

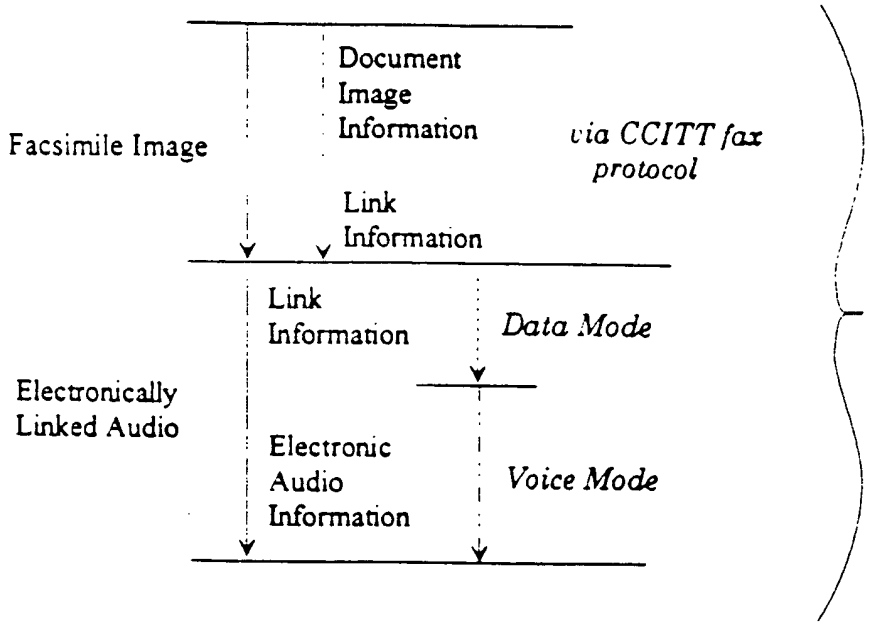


Figure 58(c)

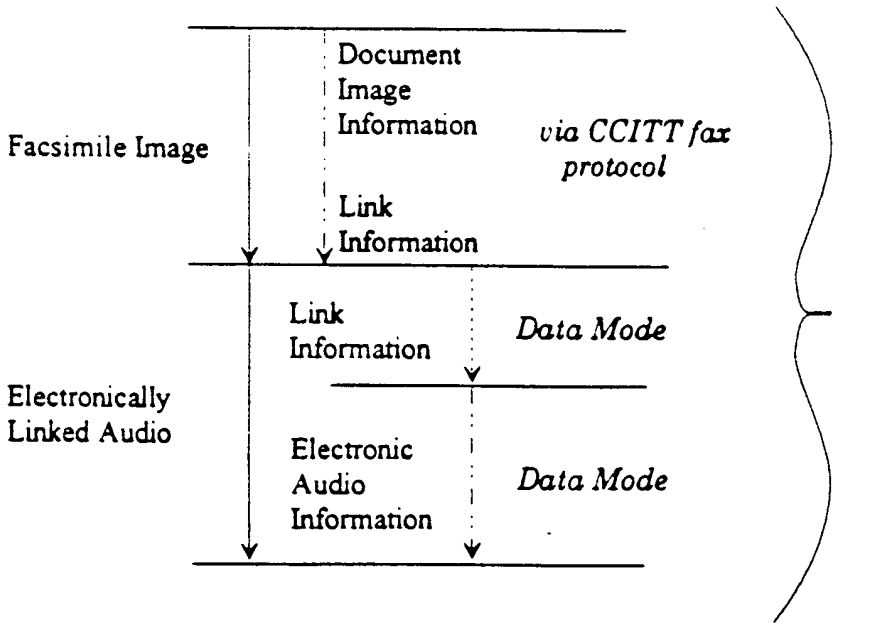


Figure 58(d)

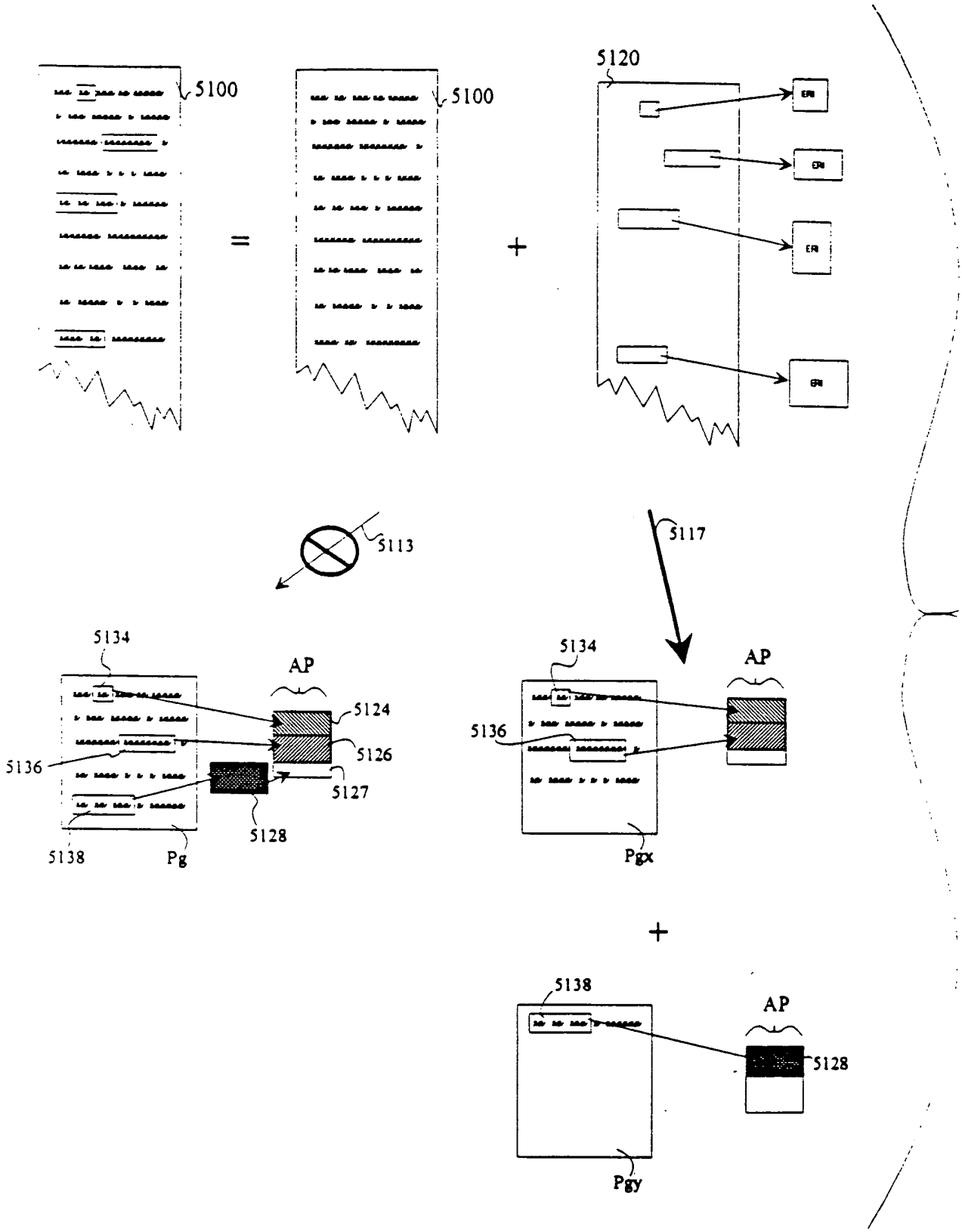

5100
5100
5120
5113
5117
5134
AP
5124
5126
5127
5136
5128
5138
Pg
5134
AP
5136
Pgx
5138
AP
5128
Pgy

Figure 59

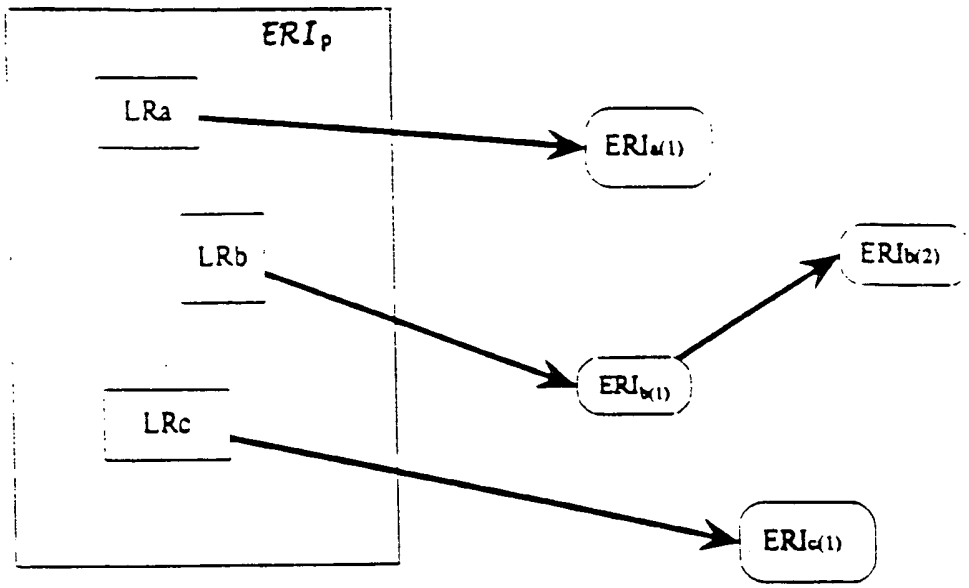


Figure 60(a)

NAR(p)	NAR(a)	NAR(b1,b2)	NAR(c) ...	NAR(n1,..,nm)
Location(p,1)	Location(a,1)	Location(b,1)	Location(c,1)	Location(n,1)
		Location(b,2)		
				⋮ Location(n,m)

Figure 60(b)

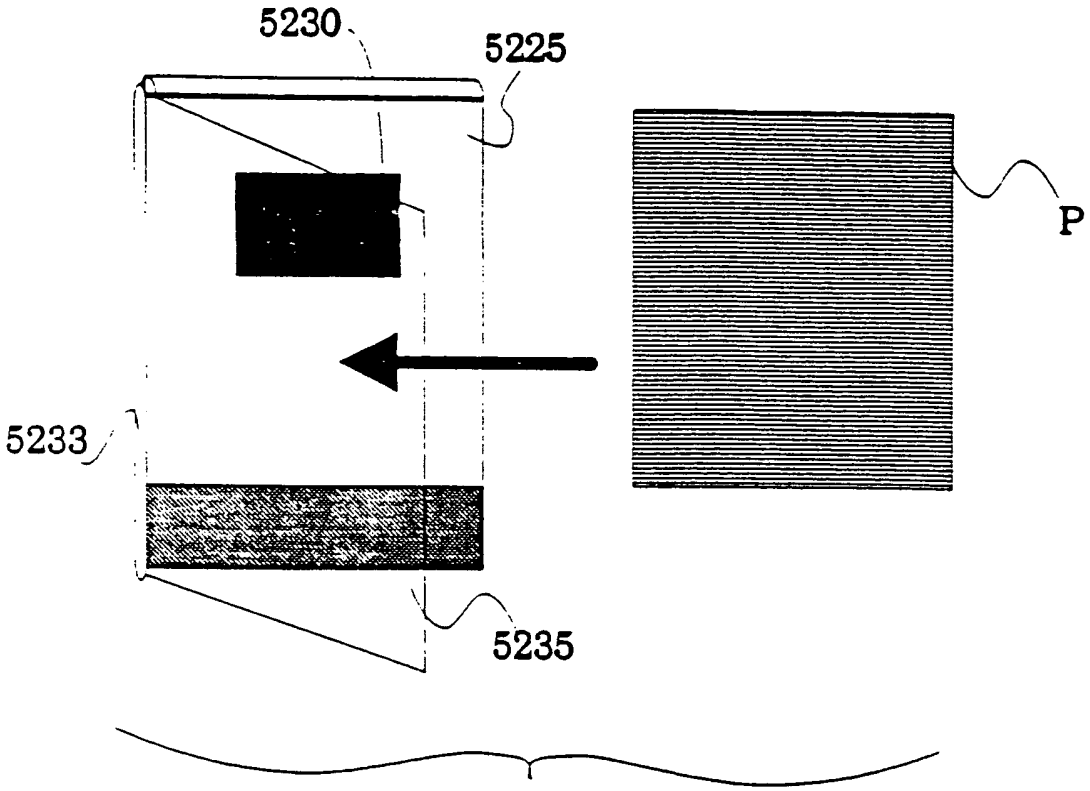


Figure 61(a)

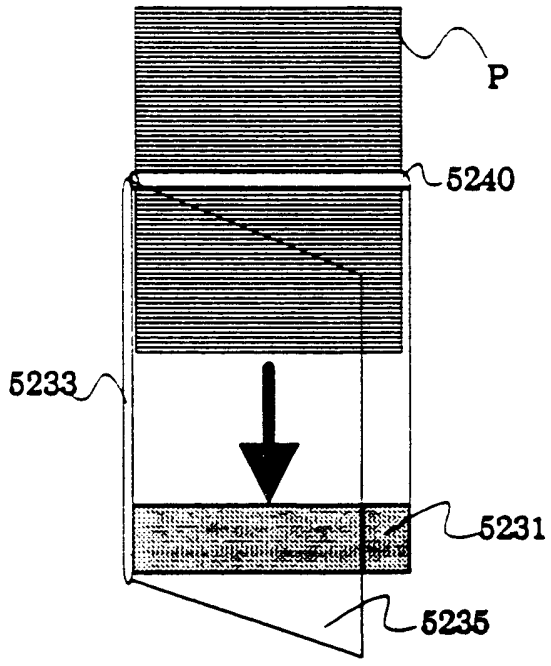
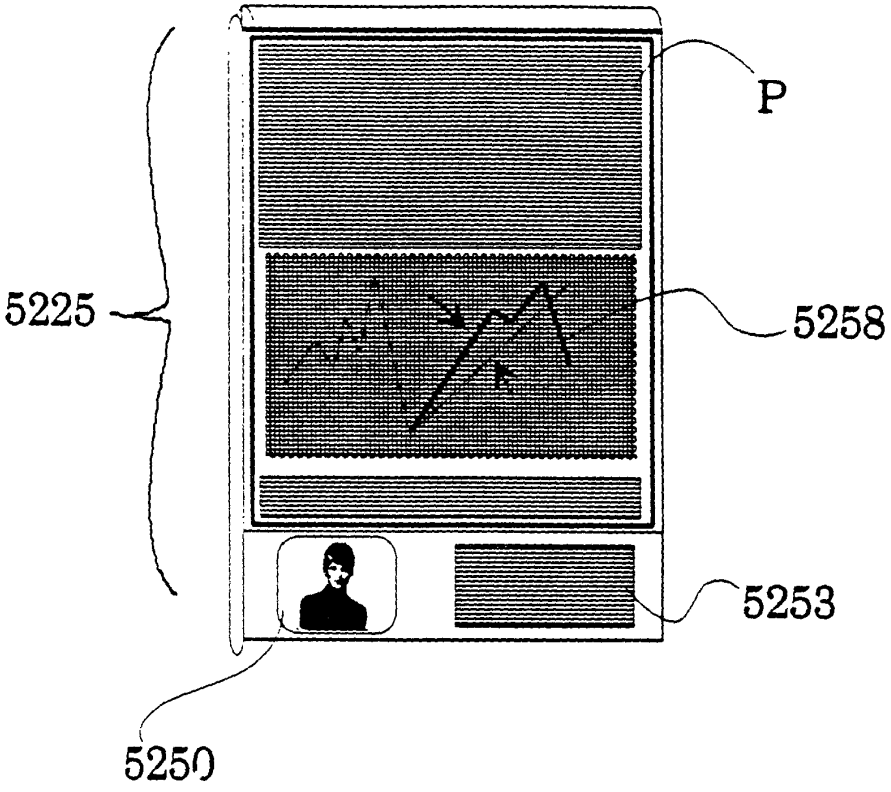


Figure 61(b)



"As you can see, the actual outcome did not exactly match our department's prediction." 5255

Figure 62

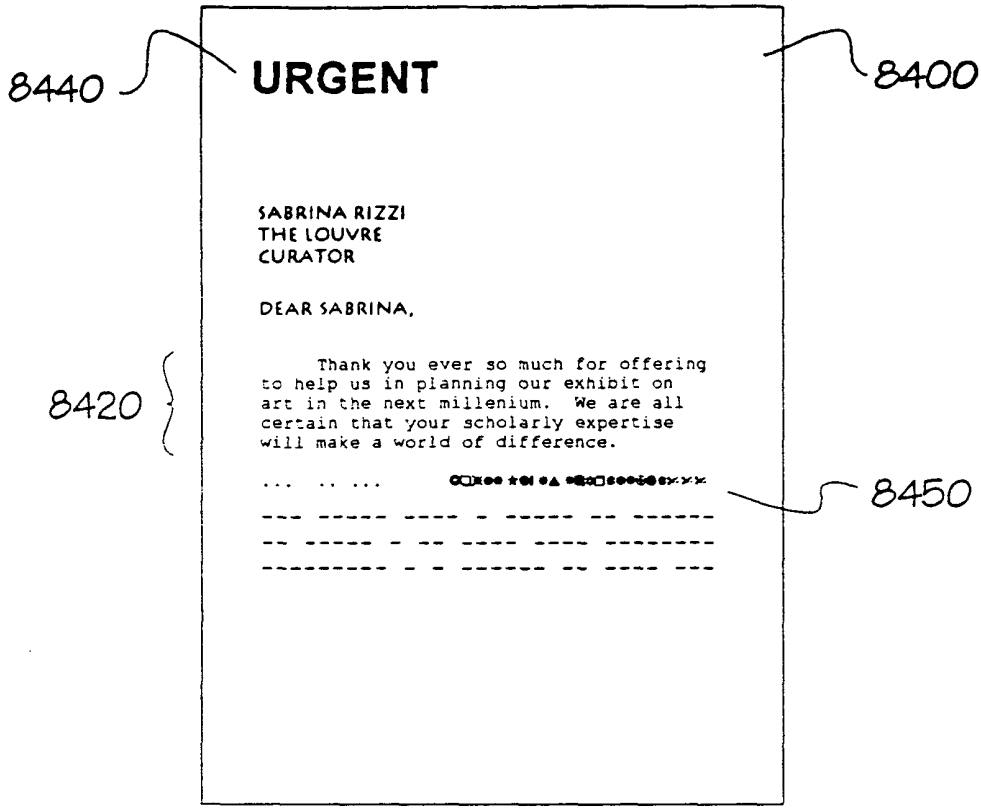


Figure 63(a)

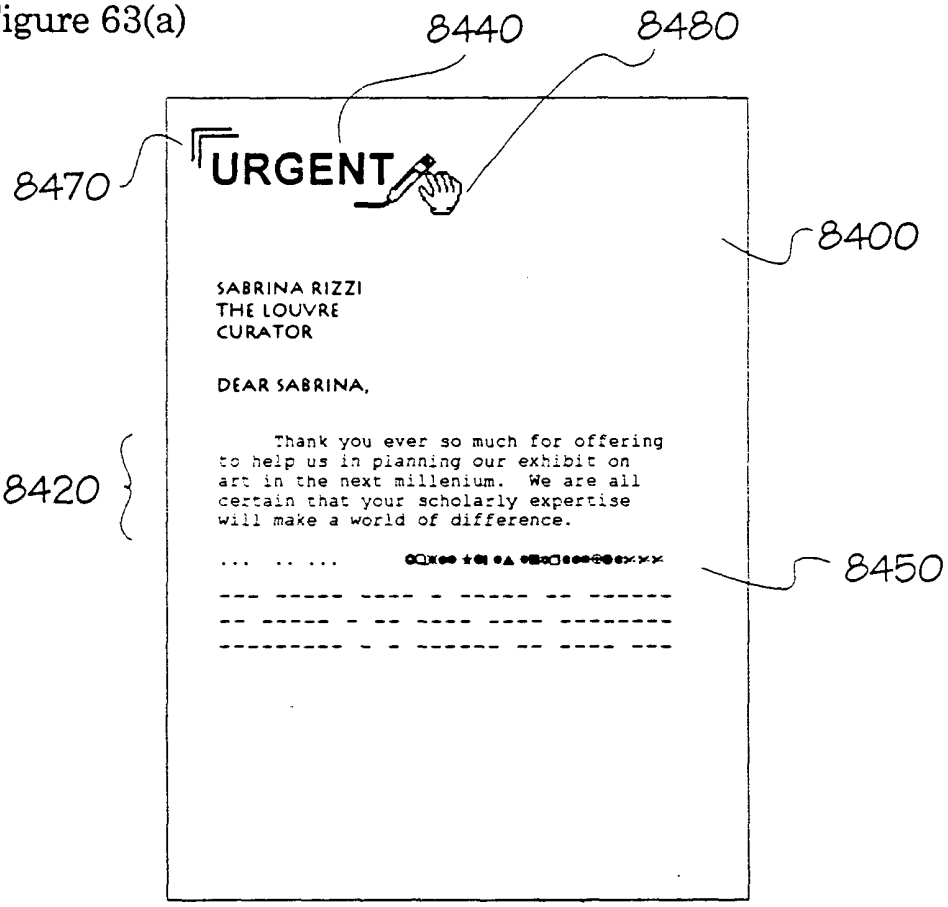


Figure 63(b)

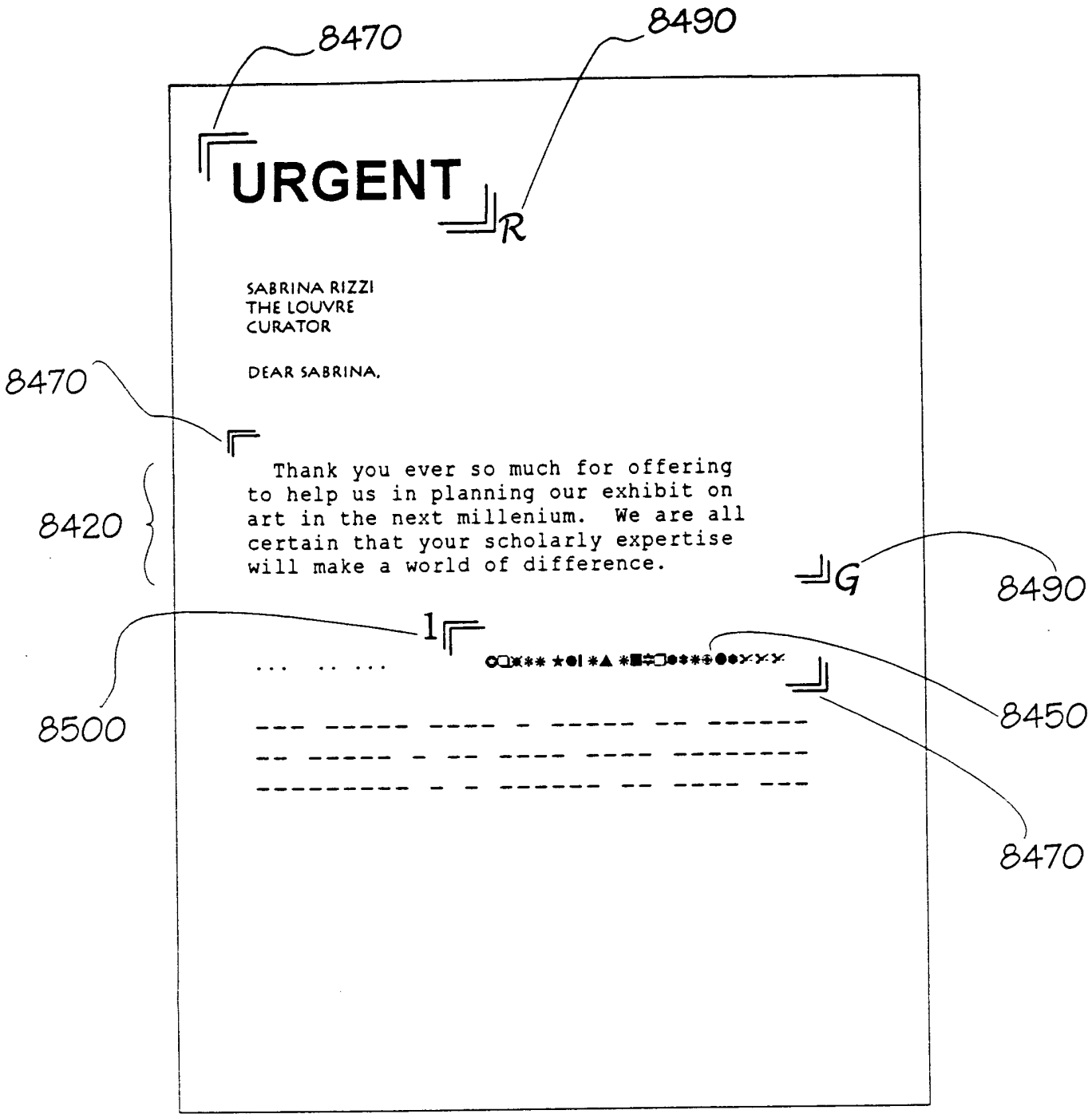

8470
8490
URGENT
R
SABRINA RIZZI
THE LOUVRE
CURATOR
DEAR SABRINA,
8470
Thank you ever so much for offering to help us in planning our exhibit on art in the next millenium. We are all certain that your scholarly expertise will make a world of difference.
8420
G
8490
1
8500
8450
8470

Figure 64

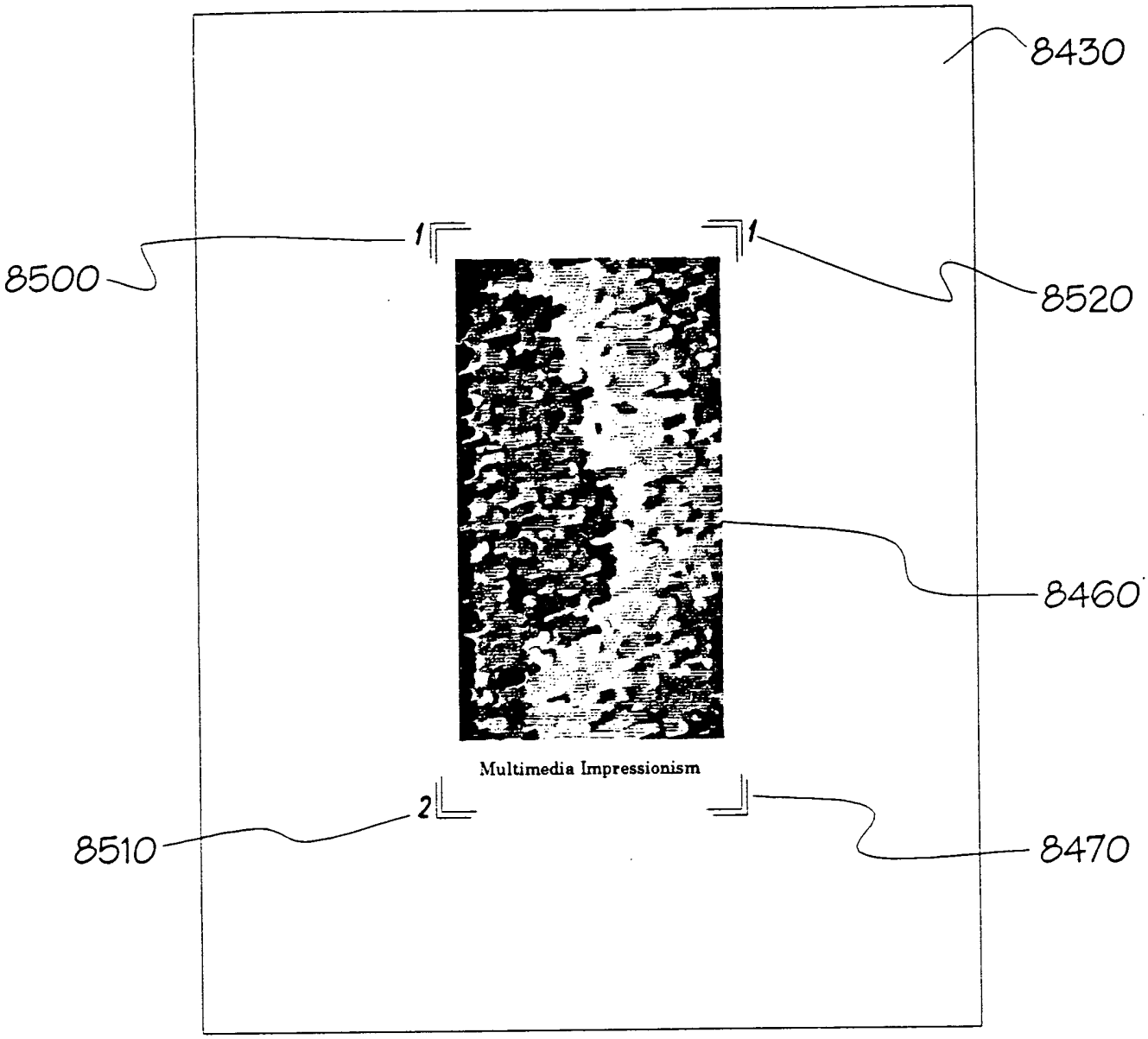

8430
1
1
8500
8520
8460
Multimedia Impressionism
2
8510
8470

Figure 65

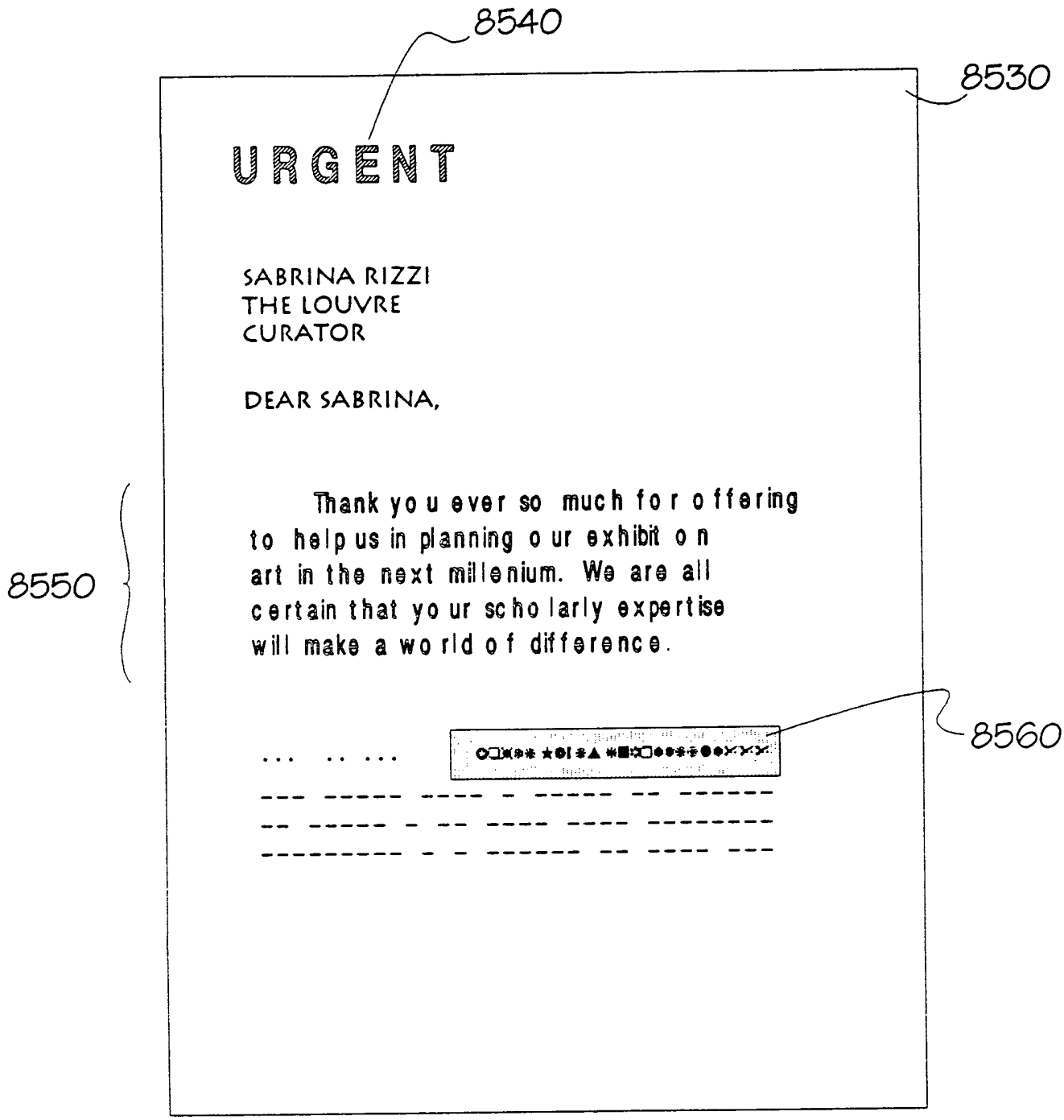

8540
8530
URGENT
SABRINA RIZZI
THE LOUVRE
CURATOR
DEAR SABRINA,
Thank you ever so much for offering to help us in planning our exhibit on art in the next millenium. We are all certain that your scholarly expertise will make a world of difference.
8550
8560

Figure 66

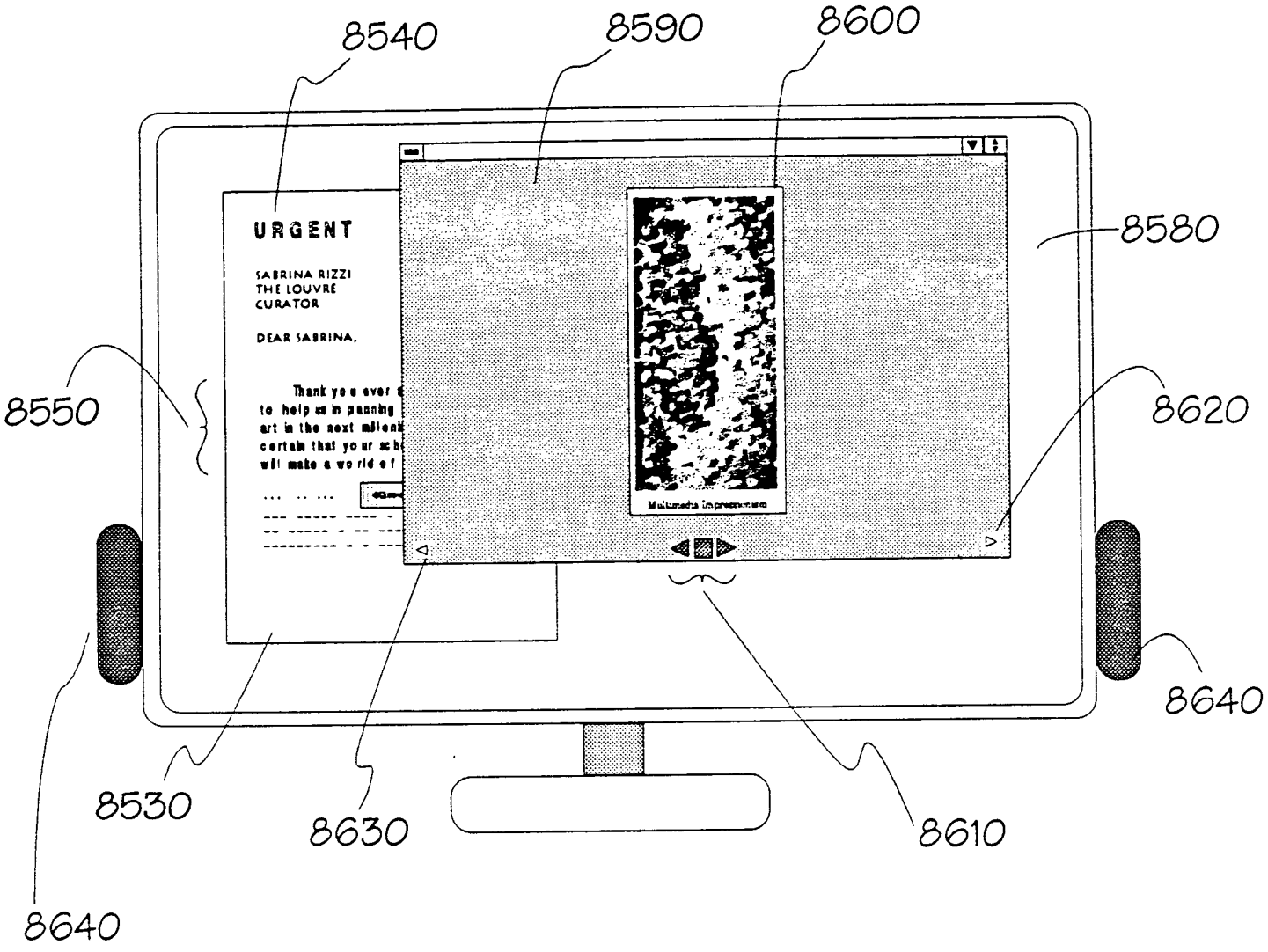

8540
8590
8600
URGENT
SABRINA RIZZI
THE LOUVRE
CURATOR
DEAR SABRINA,
8580
8550
8620
8640
8530
8630
8610
8640

Figure 67

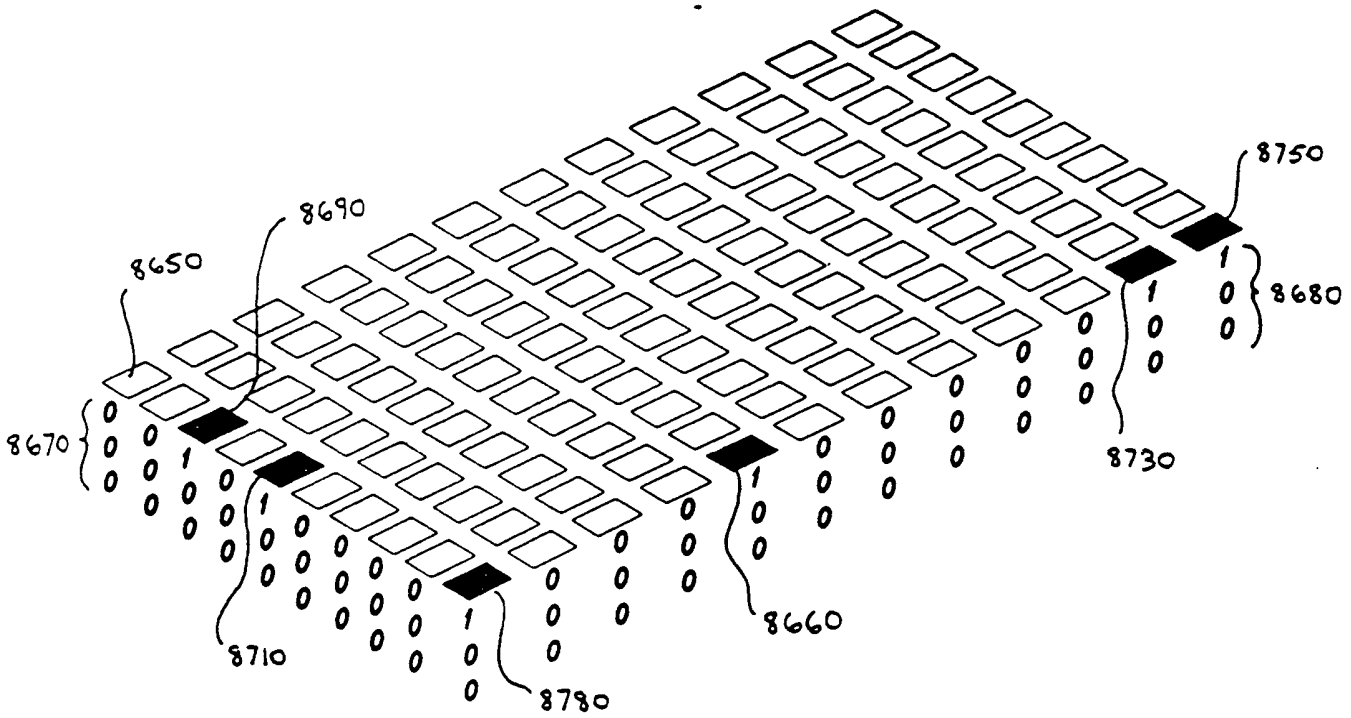


Figure 68(a)

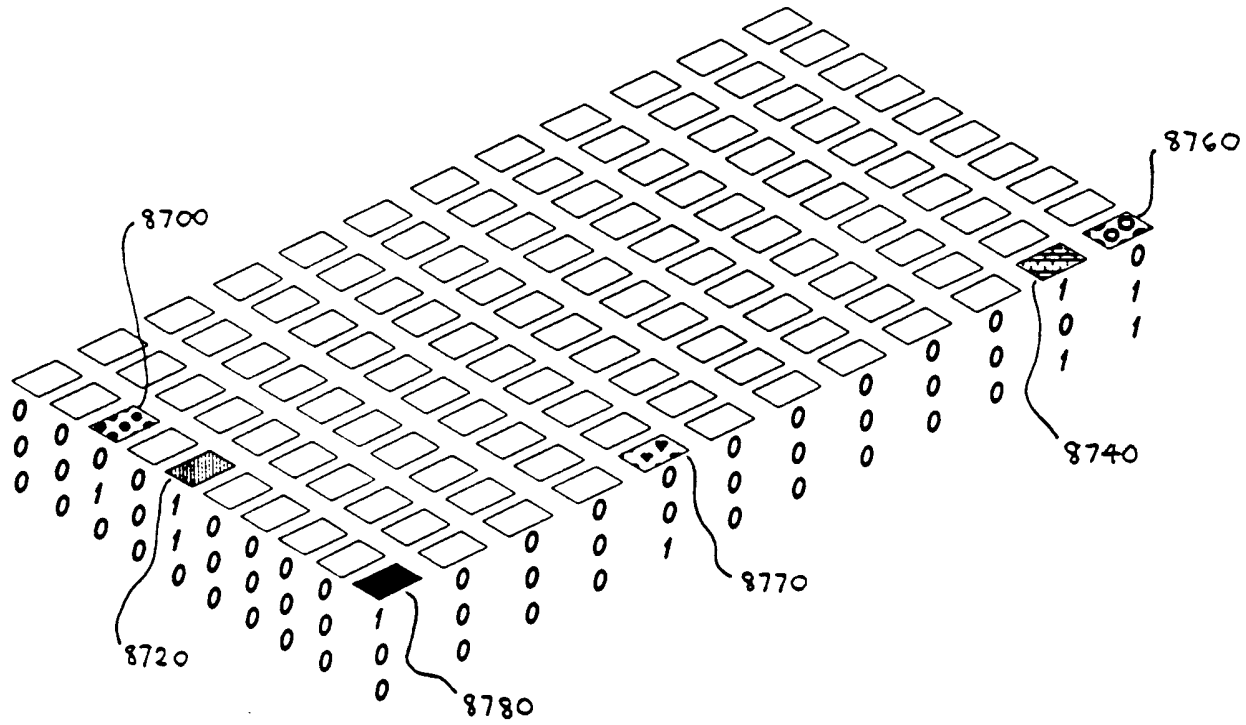


Figure 68 (b)

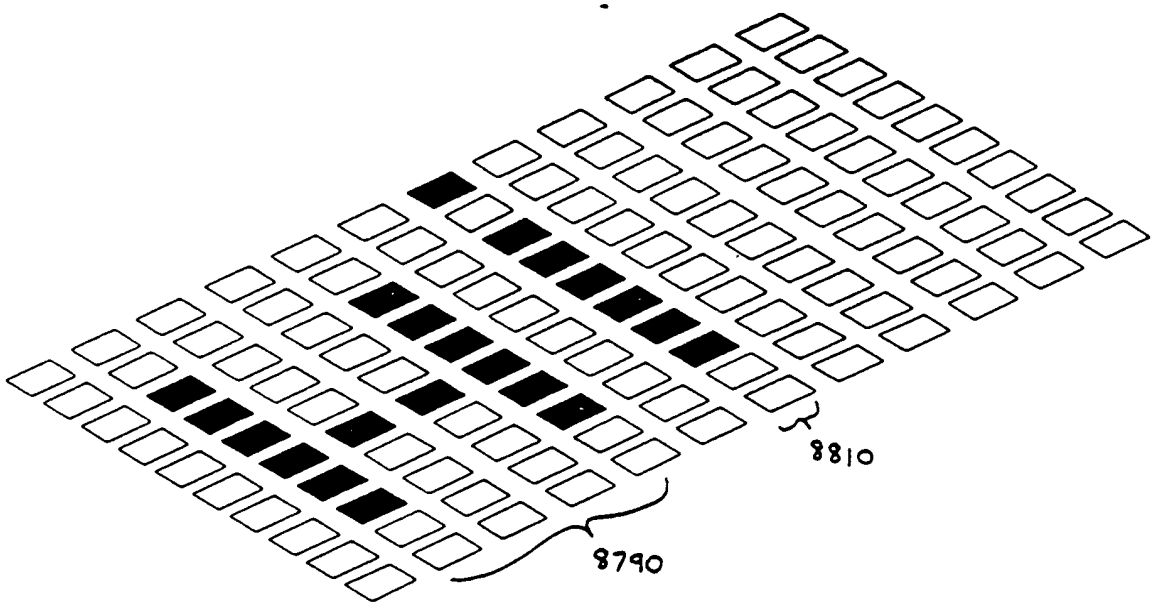


Figure 69(a)

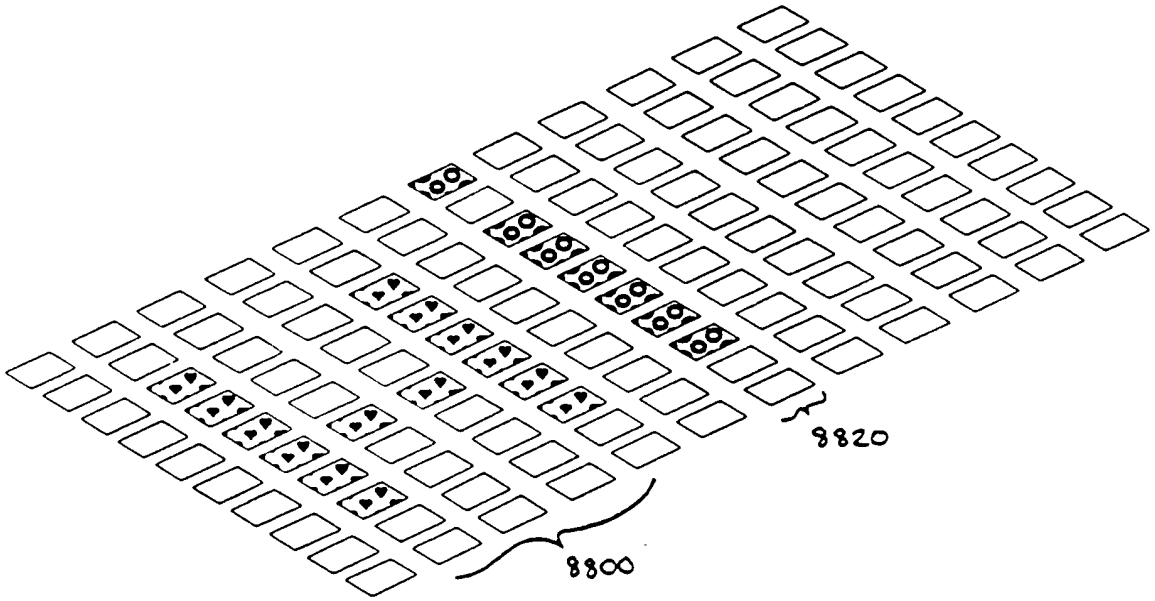


Figure 69(b)

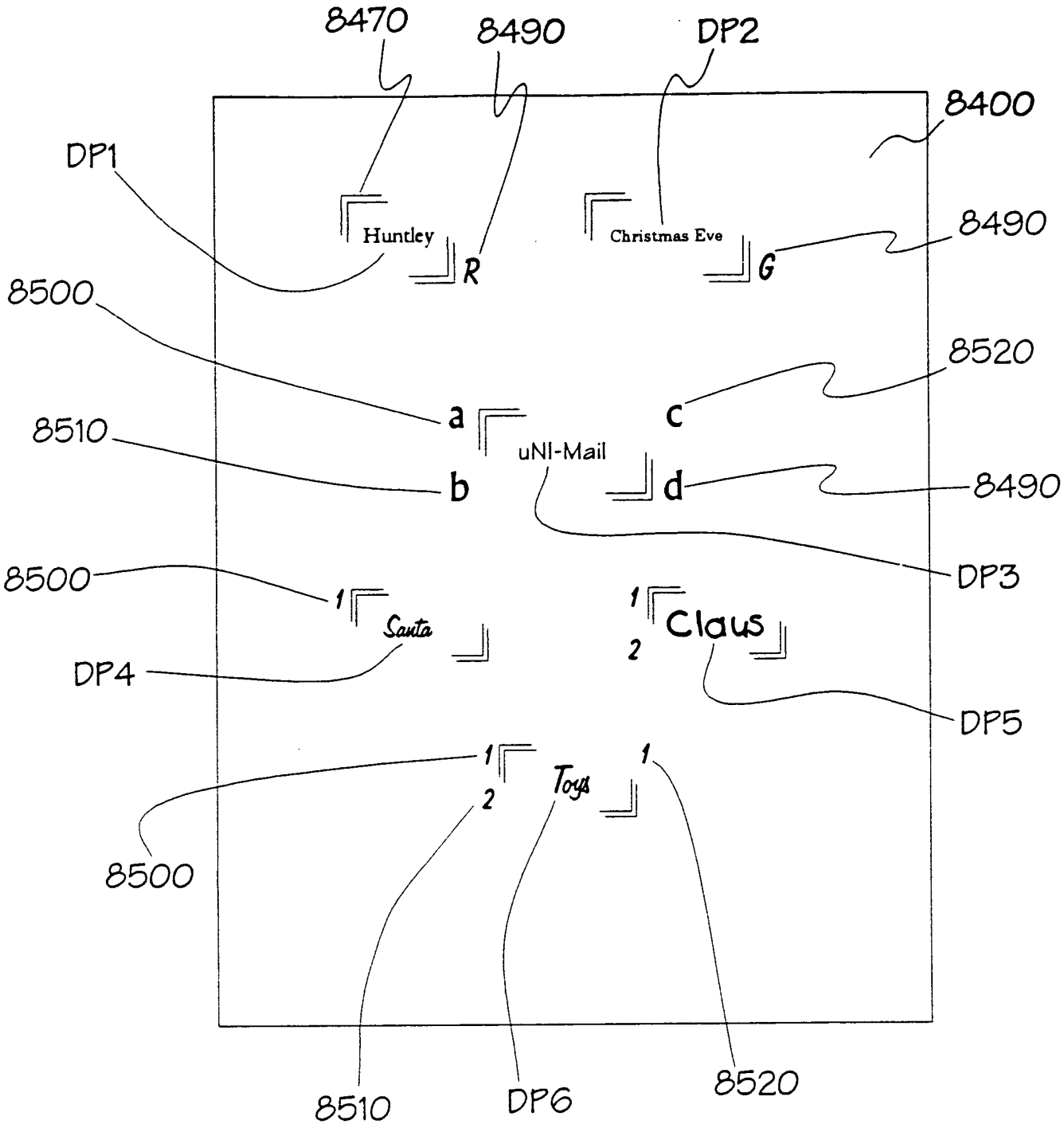

8470
8490
DP2
8400
DP1
Huntley
R
Christmas Eve
G
8490
8500
8520
a
c
8510
uNI-Mail
b
d
8490
DP3
8500
1
Santa
1
Claus
2
DP4
DP5
1
1
Toys
2
8500
8510
DP6
8520

Figure 70

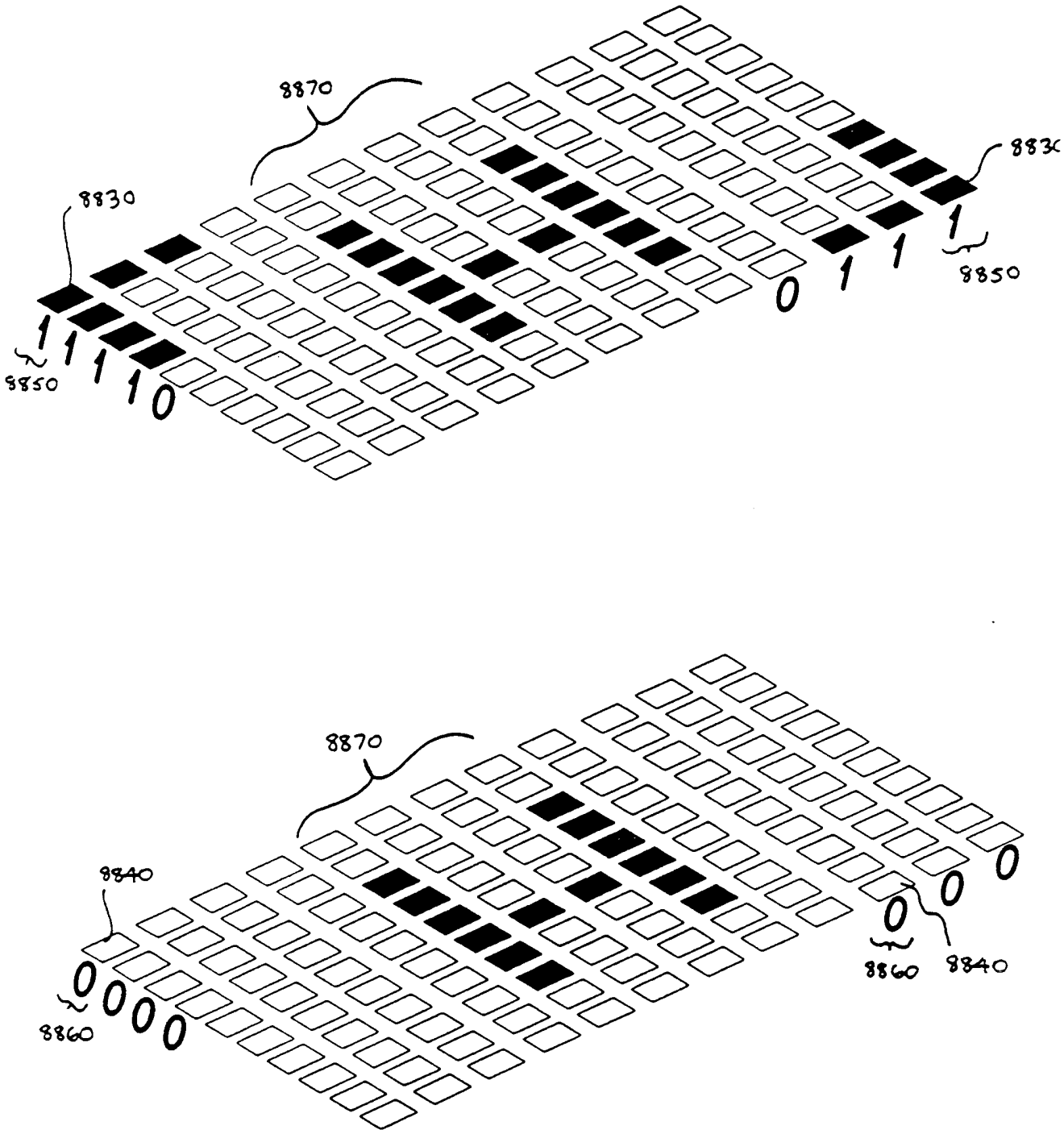

8870
8830
8850
1 1 1 1 0
8850
8830
1 1 1 0
8870
8840
0 0 0 0
8860
0 0 0 0
8860
8840

Figure 71

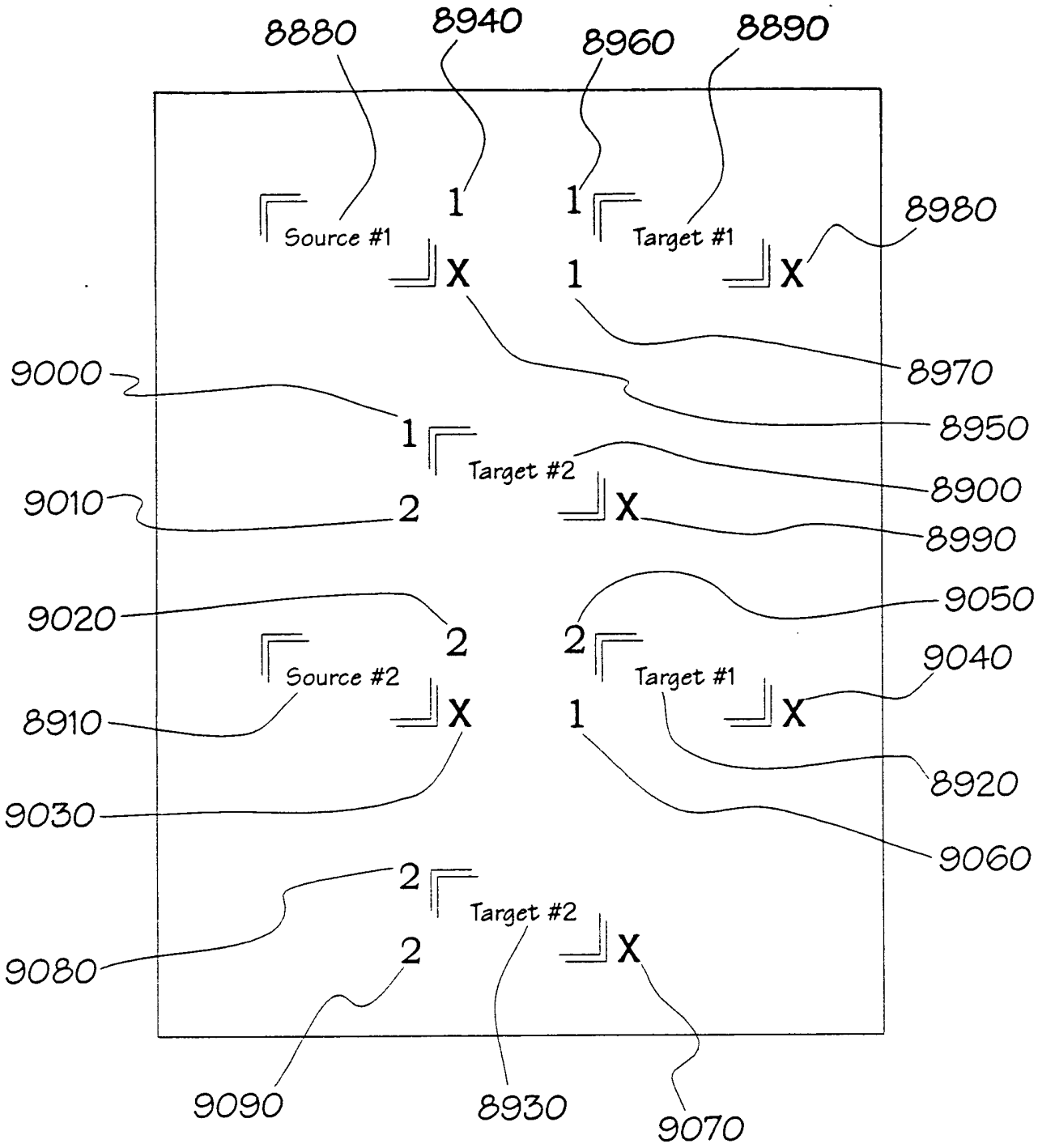

8880
8940
8960
8890
Source #1
1
1
Target #1
8980
X
1
X
9000
8970
1
8950
Target #2
8900
9010
2
X
8990
9020
9050
2
2
Source #2
Target #1
9040
8910
X
1
X
8920
9030
9060
2
Target #2
9080
2
X
9090
8930
9070

Figure 72

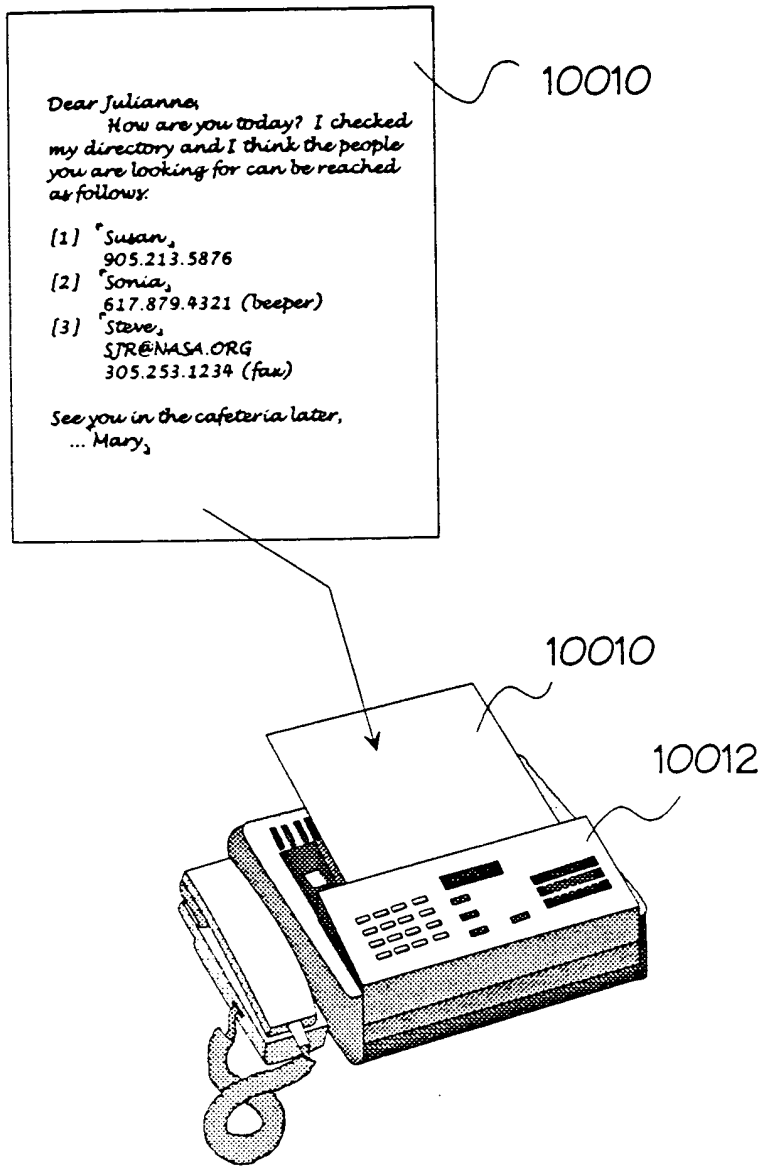

Dear Julianne,
How are you today? I checked my directory and I think the people you are looking for can be reached as follows:
[1] "Susan"
905.213.5876
[2] "Sonia"
617.879.4321 (beeper)
[3] "Steve"
SJR@NASA.ORG
305.253.1234 (fax)
See you in the cafeteria later,
... Mary"
10010
10010
10012

Figure 73

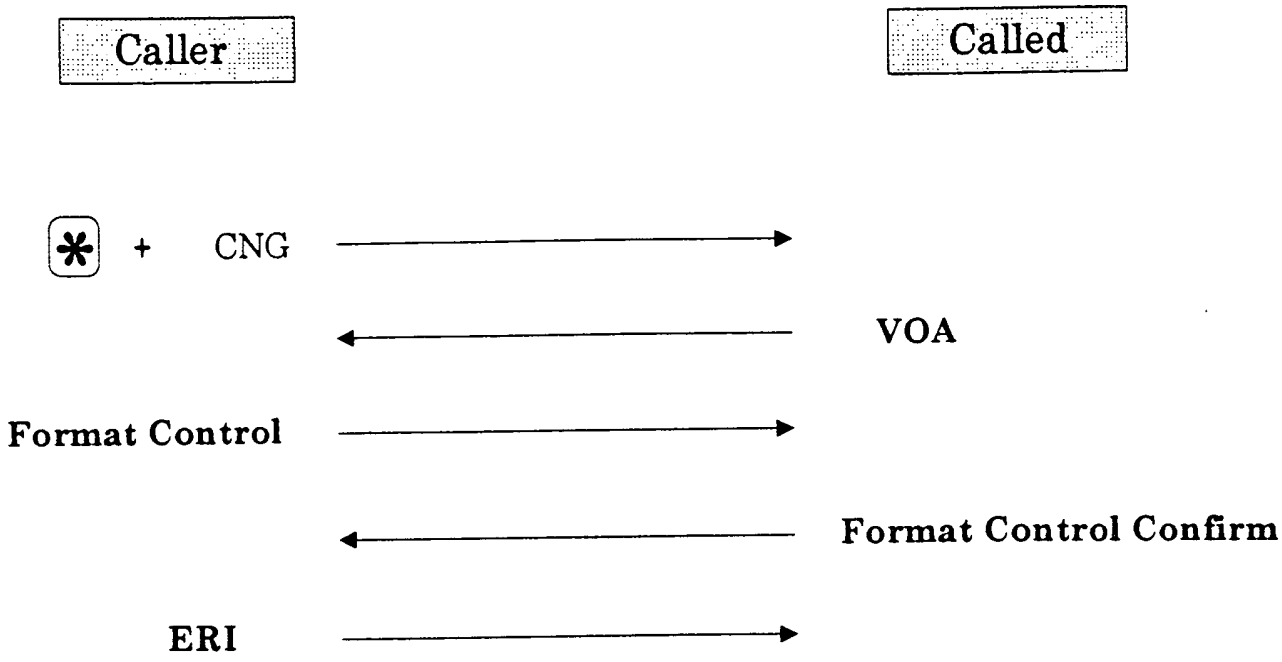

Caller
Called
* + CNG
VOA
Format Control
Format Control Confirm
ERI

Figure 74

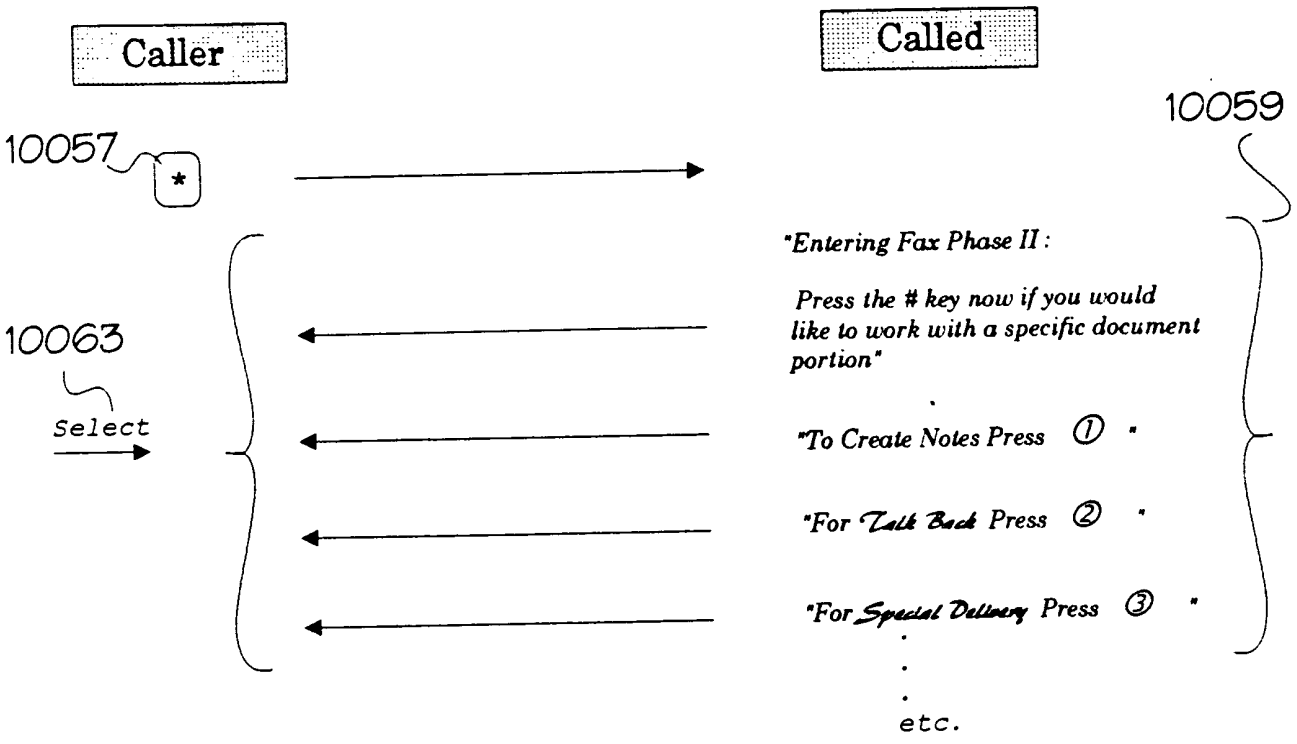

Caller
Called
10057
*
10059
"Entering Fax Phase II :
Press the # key now if you would like to work with a specific document portion"
10063
Select
"To Create Notes Press ①"
"For Talk Back Press ②"
"For Special Delivery Press ③"
etc.

Figure 75

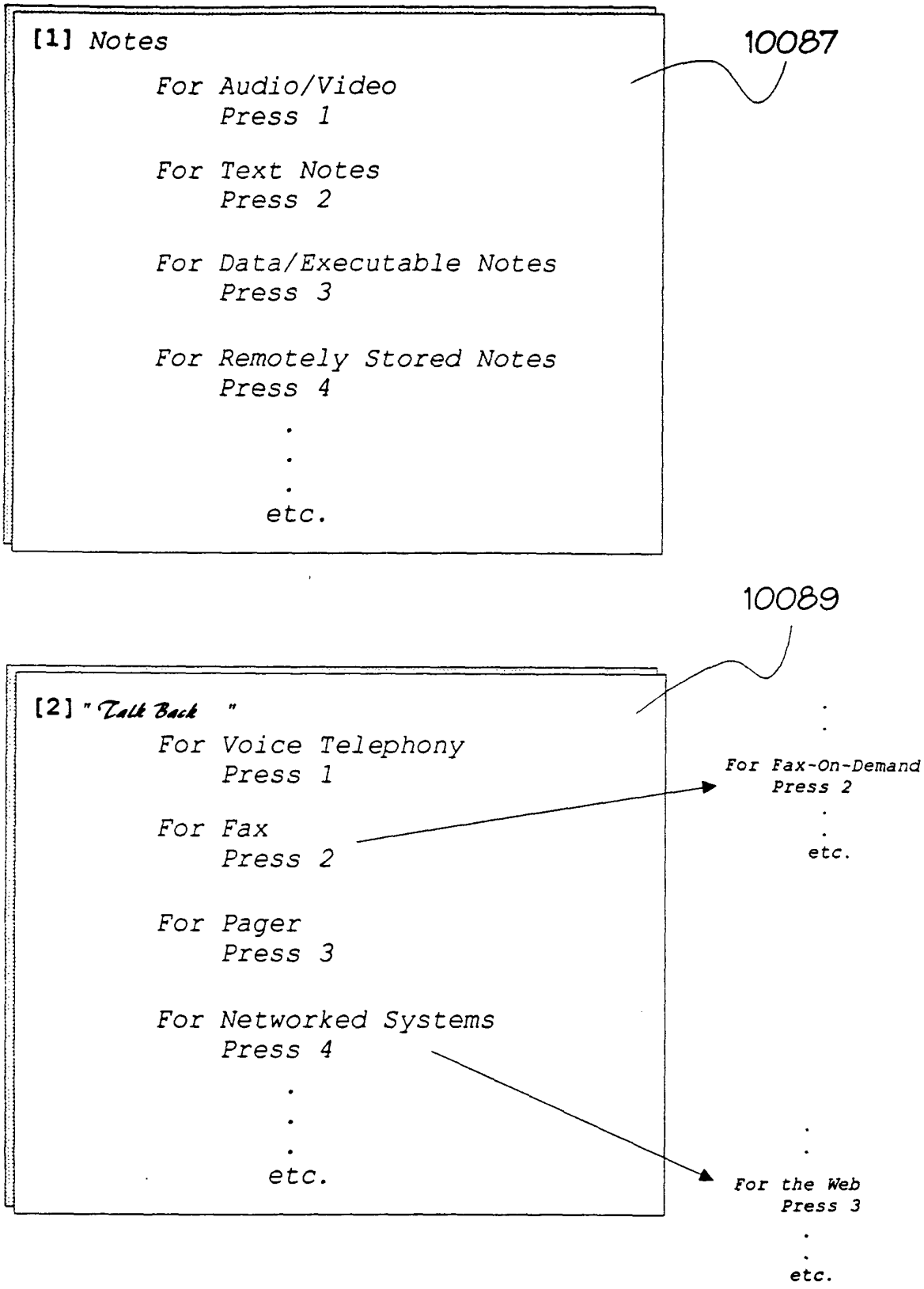
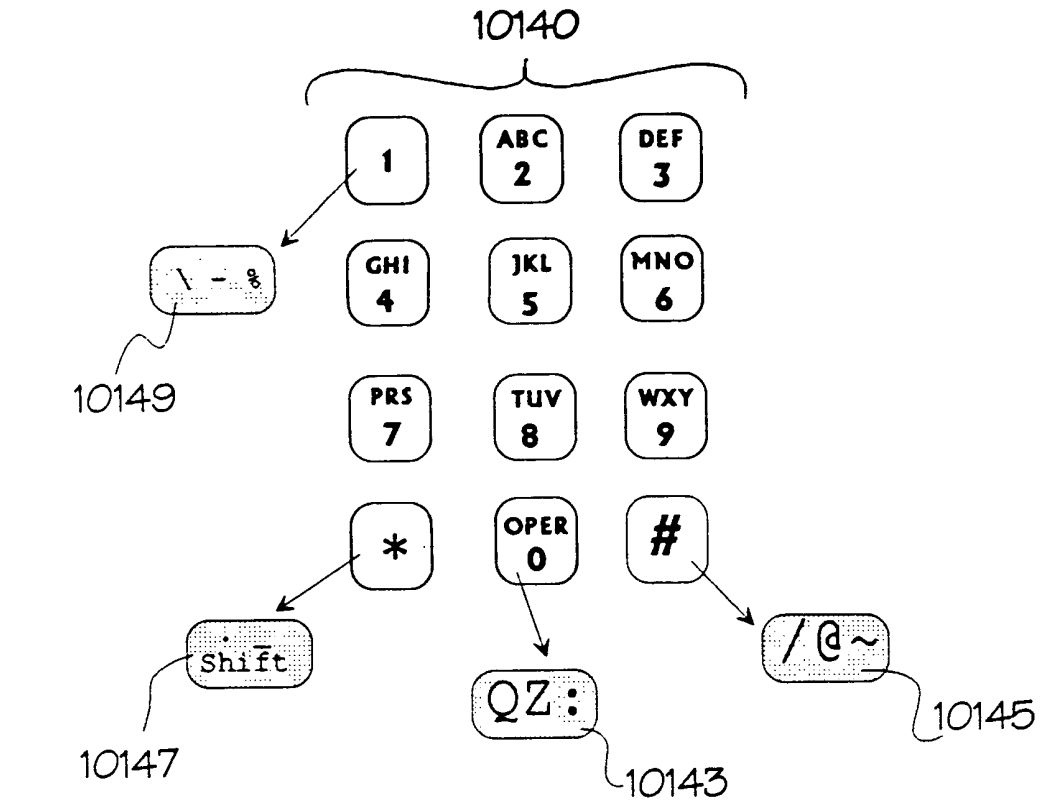

[1] Notes
For Audio/Video
Press 1
For Text Notes
Press 2
For Data/Executable Notes
Press 3
For Remotely Stored Notes
Press 4
etc.
10087
10089
[2] "Talk Back"
For Voice Telephony
Press 1
For Fax
Press 2
For Pager
Press 3
For Networked Systems
Press 4
etc.
For Fax-On-Demand
Press 2
etc.
For the Web
Press 3
etc.

Figure 76



{ 73 + 51 + 72 + #2 + 62 + 21 + 73 + 21 + *1 + 63 + 72 + 41 }

10165

sjr@nasa.org

10162

{ 91 + 91 + 91 + *1 + 71 + 43 + 32 + *1 + 23 + 63 + 61 }

10167

www.pie.com

10169

Figure 77

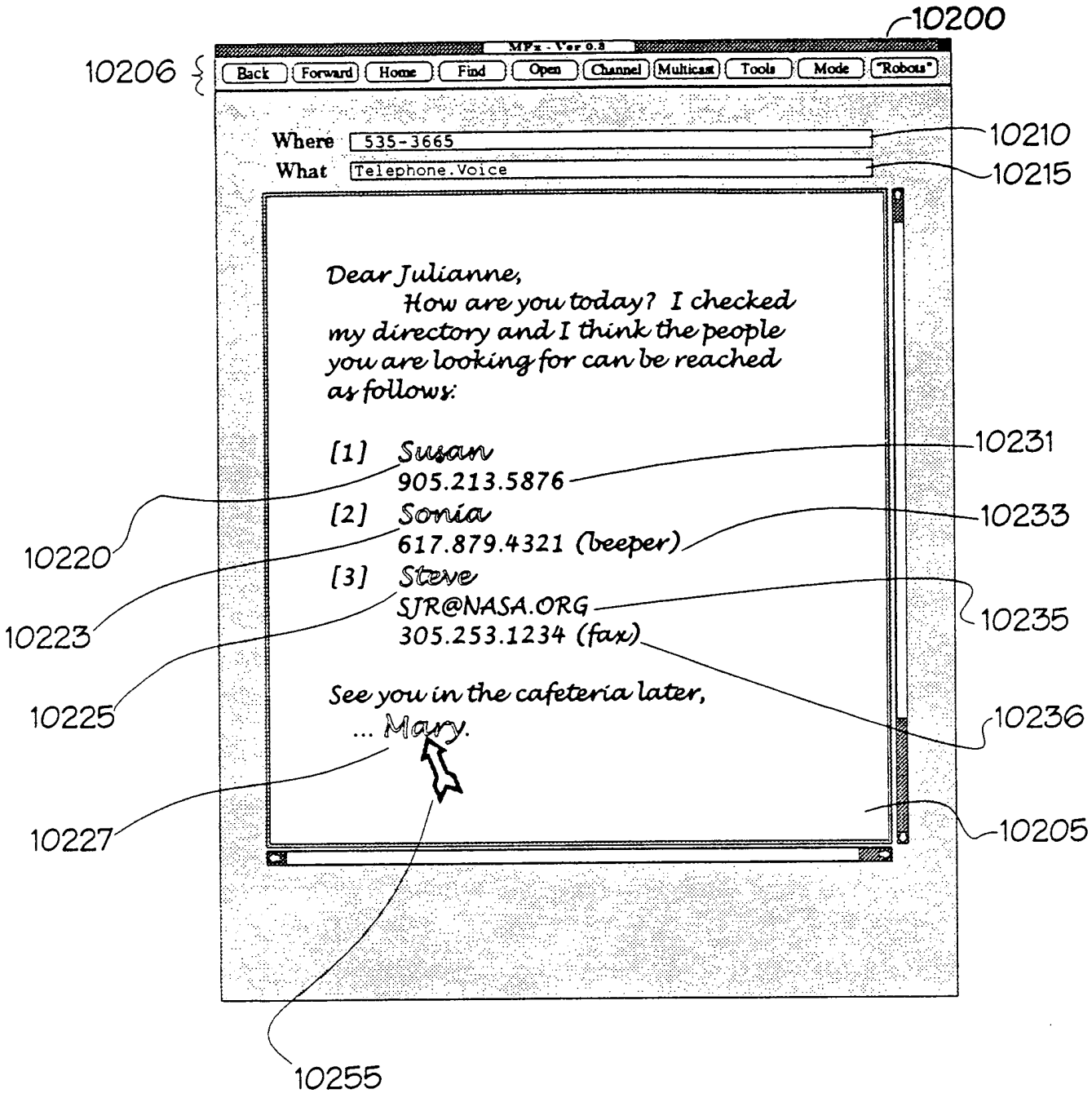

10200
10206
MPx - Ver 0.8
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robous"
Where
535-3665
What
Telephone.Voice
10210
10215
Dear Julianne,
How are you today? I checked my directory and I think the people you are looking for can be reached as follows:
[1] Susan
905.213.5876
[2] Sonia
617.879.4321 (beeper)
[3] Steve
SJR@NASA.ORG
305.253.1234 (fax)
See you in the cafeteria later,
... Mary.
10231
10233
10235
10236
10205
10220
10223
10225
10227
10255

Figure 78

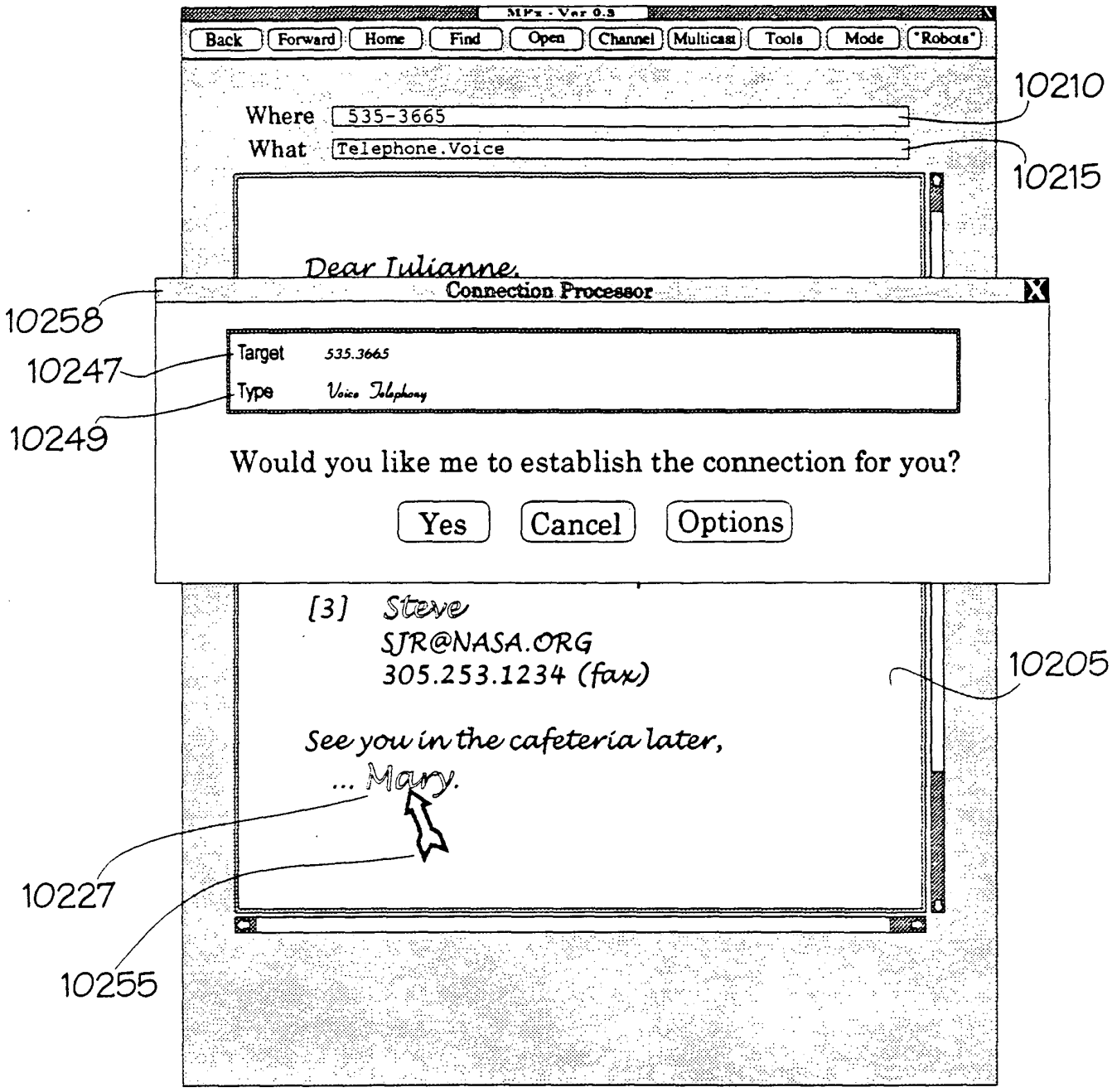

MPx - Ver 0.3
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robots"
Where 535-3665
What Telephone.Voice
10210
10215
Dear Julianne,
Connection Processor
10258
Target 535.3665
Type Voice Telephony
10247
10249
Would you like me to establish the connection for you?
Yes
Cancel
Options
[3] Steve
SJR@NASA.ORG
305.253.1234 (fax)
10205
See you in the cafeteria later,
... Mary.
10227
10255

Figure 79

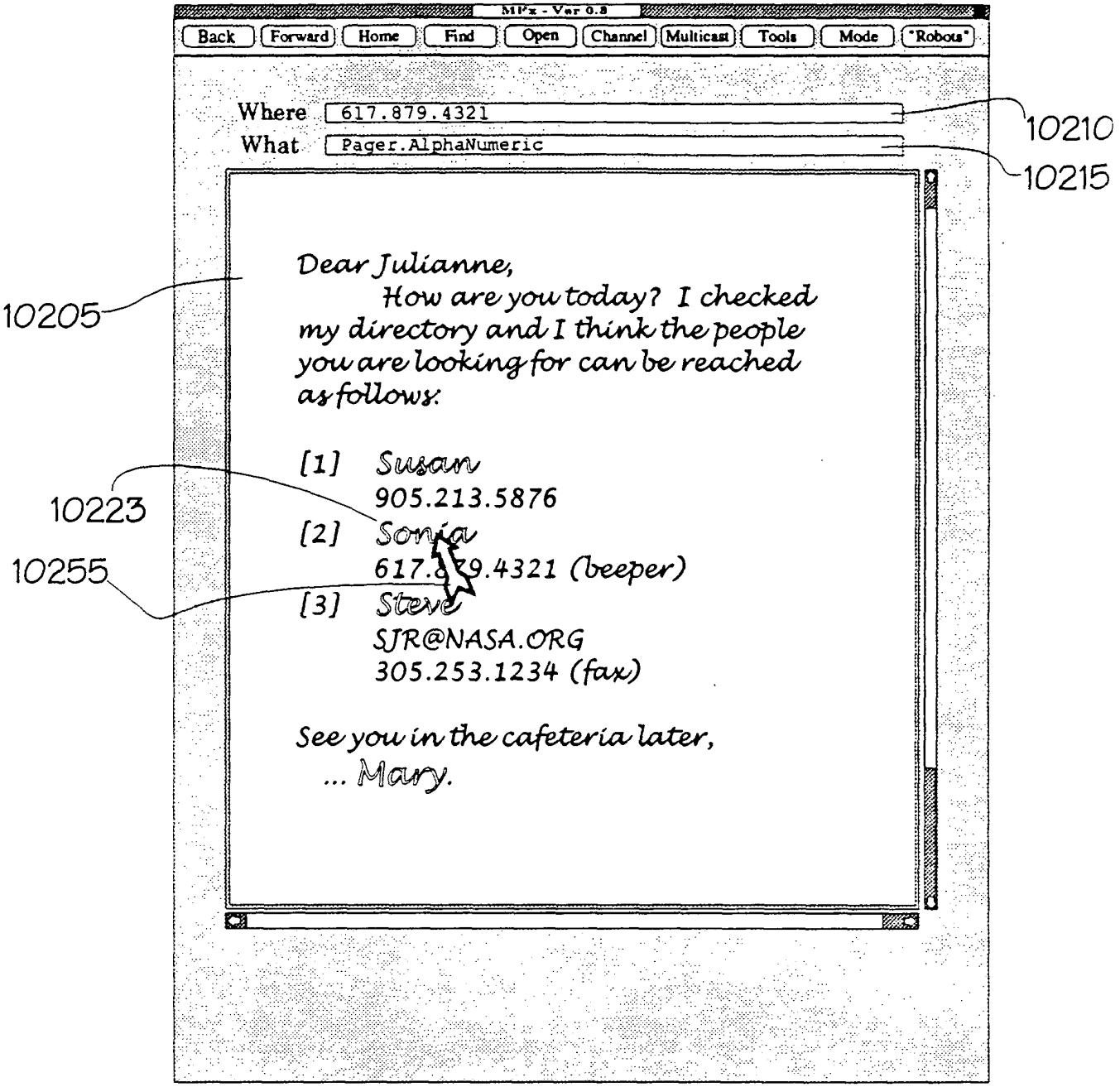

MPx - Ver 0.8
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robous"
Where
617.879.4321
What
Pager.AlphaNumeric
10210
10215
10205
Dear Julianne,
How are you today? I checked my directory and I think the people you are looking for can be reached as follows:
[1] Susan
905.213.5876
[2] Sonia
617.879.4321 (beeper)
[3] Steve
SJR@NASA.ORG
305.253.1234 (fax)
10223
10255
See you in the cafeteria later,
... Mary.

Figure 80

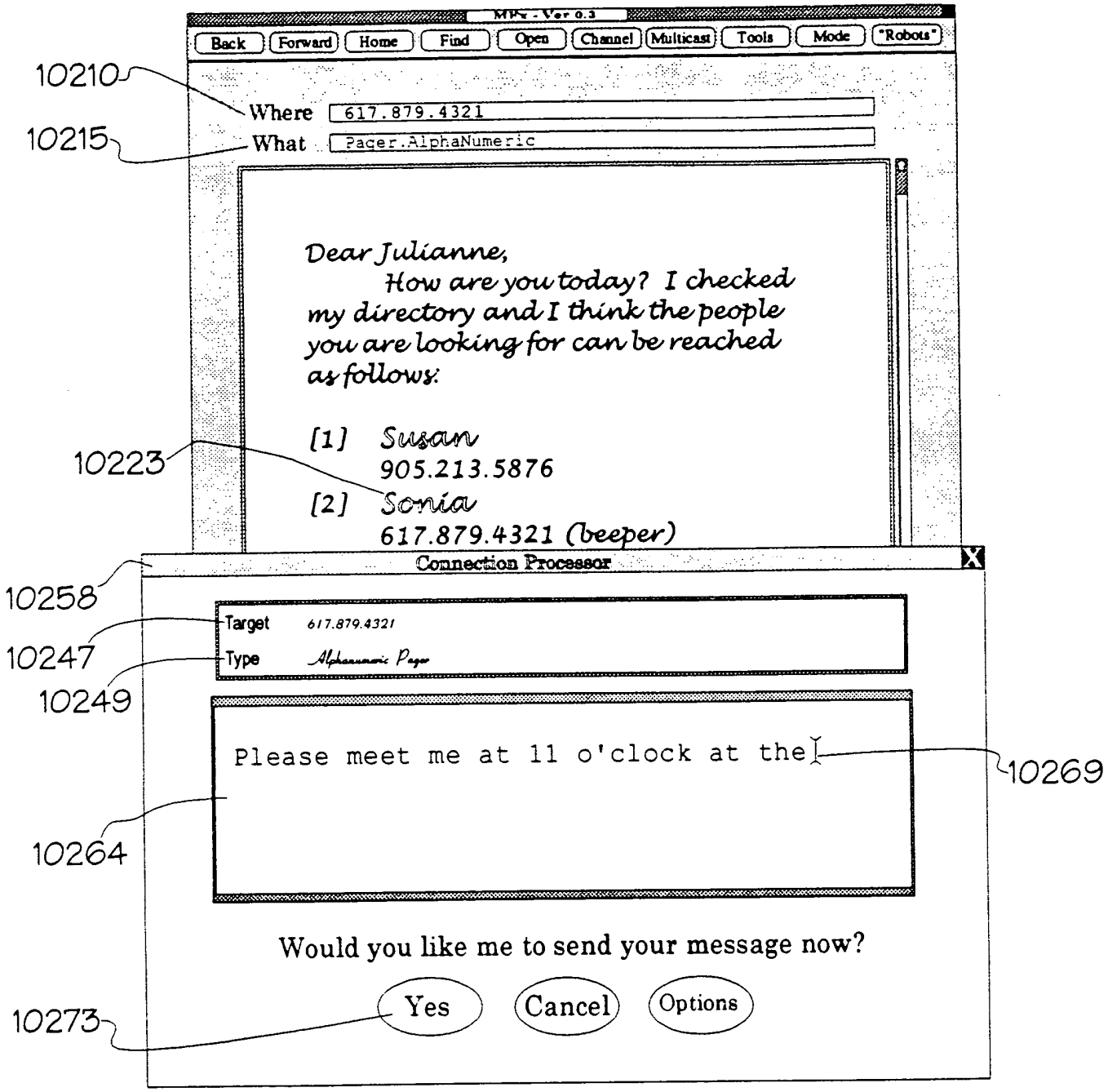

MPx - Ver 0.3
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robots"
10210
Where
617.879.4321
10215
What
Pager.AlphaNumeric
Dear Julianne,
How are you today? I checked my directory and I think the people you are looking for can be reached as follows:
[1] Susan
905.213.5876
[2] Sonia
617.879.4321 (beeper)
10223
Connection Processor
10258
Target
617.879.4321
10247
Type
Alphanumeric Pager
10249
Please meet me at 11 o'clock at the
10269
10264
Would you like me to send your message now?
Yes
Cancel
Options
10273

Figure 81

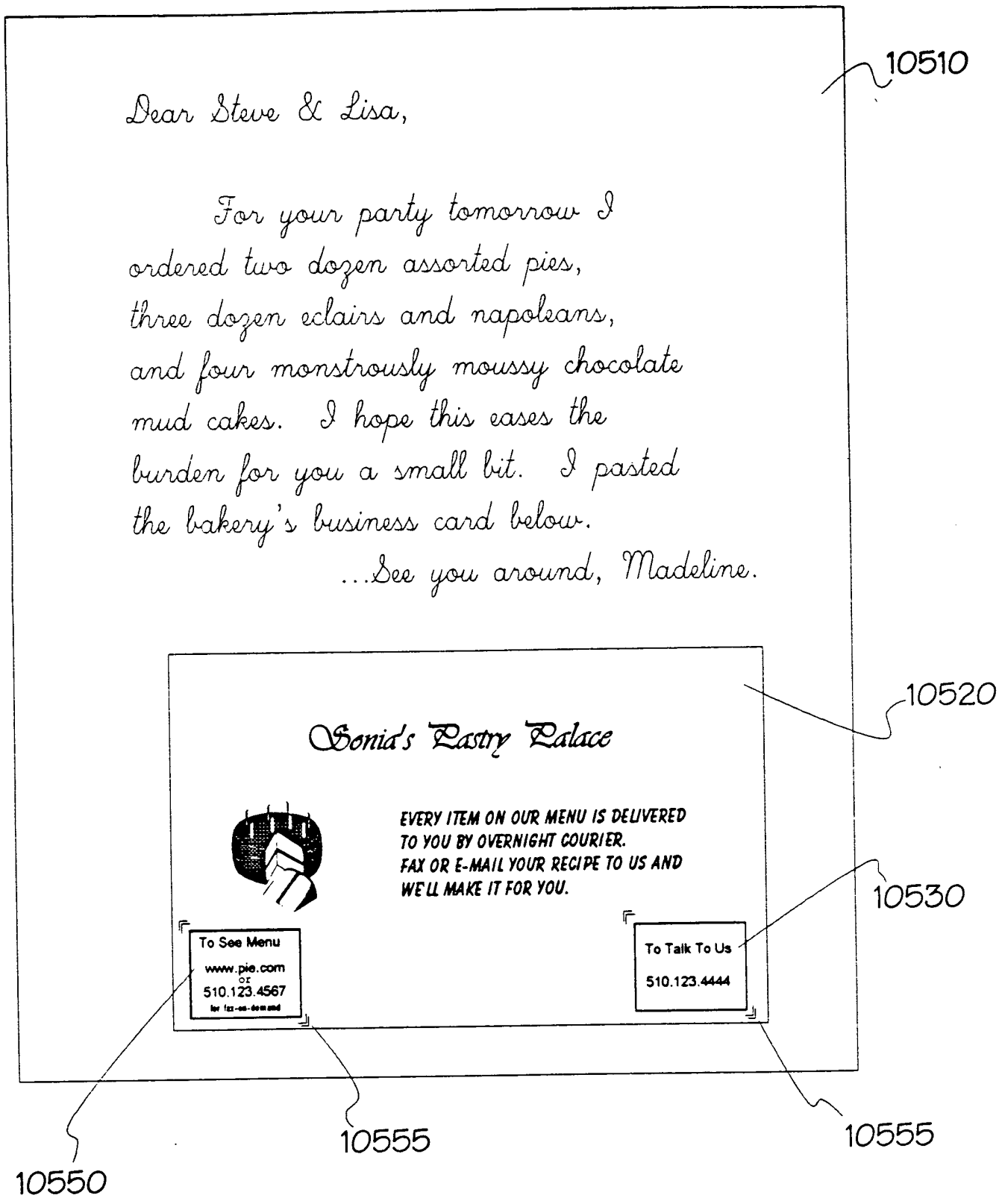

10510
Dear Steve & Lisa,
For your party tomorrow I ordered two dozen assorted pies, three dozen eclairs and napoleans, and four monstrously moussy chocolate mud cakes. I hope this eases the burden for you a small bit. I pasted the bakery's business card below.
...See you around, Madeline.
10520
Sonia's Pastry Palace
EVERY ITEM ON OUR MENU IS DELIVERED TO YOU BY OVERNIGHT COURIER.
FAX OR E-MAIL YOUR RECIPE TO US AND WE'LL MAKE IT FOR YOU.
10530
To See Menu
www.pie.com
or
510.123.4567
To Talk To Us
510.123.4444
10555
10555
10550

Figure 82

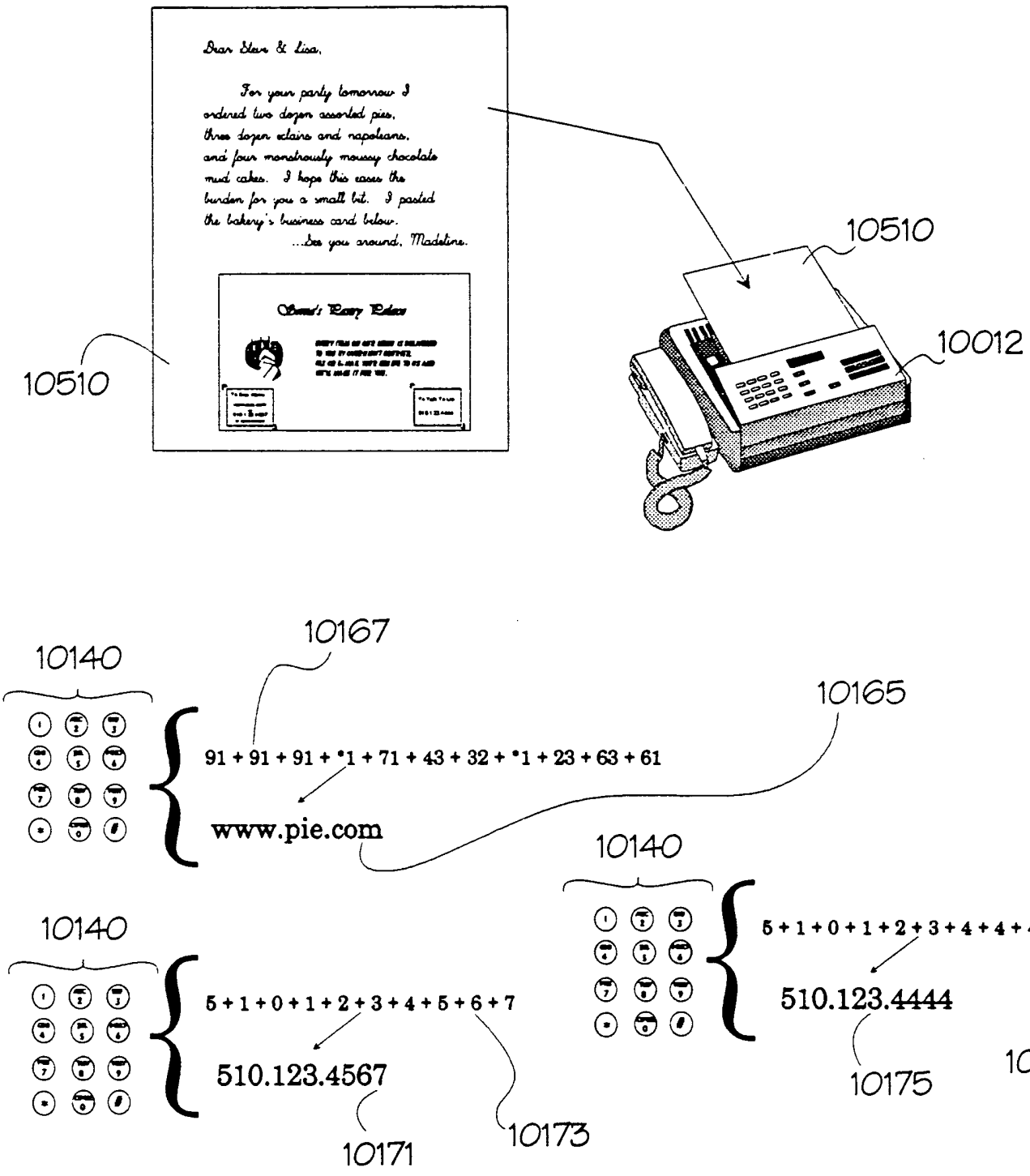

Dear Stan & Lisa,
For your party tomorrow I ordered two dozen assorted pies, three dozen eclairs and napoleans, and four monstrously mousey chocolate mud cakes. I hope this eases the burden for you a small bit. I pasted the bakery's business card below.
...See you around, Madeline.
10510
10510
10012
10140
10167
91 + 91 + 91 + *1 + 71 + 43 + 32 + *1 + 23 + 63 + 61
10165
www.pie.com
10140
5 + 1 + 0 + 1 + 2 + 3 + 4 + 4 + 4 + 4
510.123.4444
10175
10177
10140
5 + 1 + 0 + 1 + 2 + 3 + 4 + 5 + 6 + 7
510.123.4567
10171
10173

Figure 83

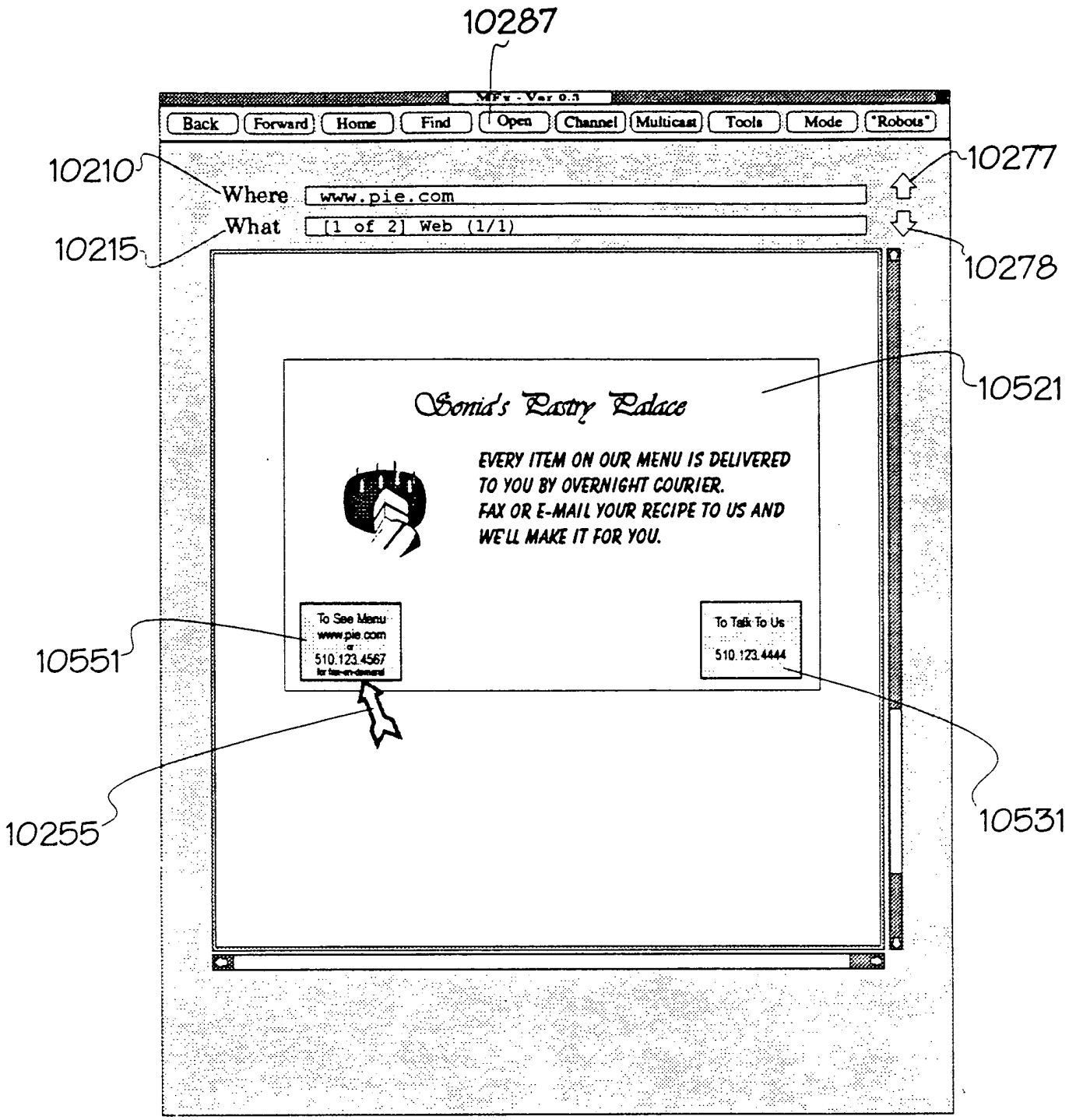

10287
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robots"
10210
Where
www.pie.com
10277
10215
What
[1 of 2] Web (1/1)
10278
10521
Sonia's Pastry Palace
EVERY ITEM ON OUR MENU IS DELIVERED
TO YOU BY OVERNIGHT COURIER.
FAX OR E-MAIL YOUR RECIPE TO US AND
WE'LL MAKE IT FOR YOU.
10551
To See Menu
www.pie.com
or
510.123.4567
To Talk To Us
510.123.4444
10255
10531

Figure 84

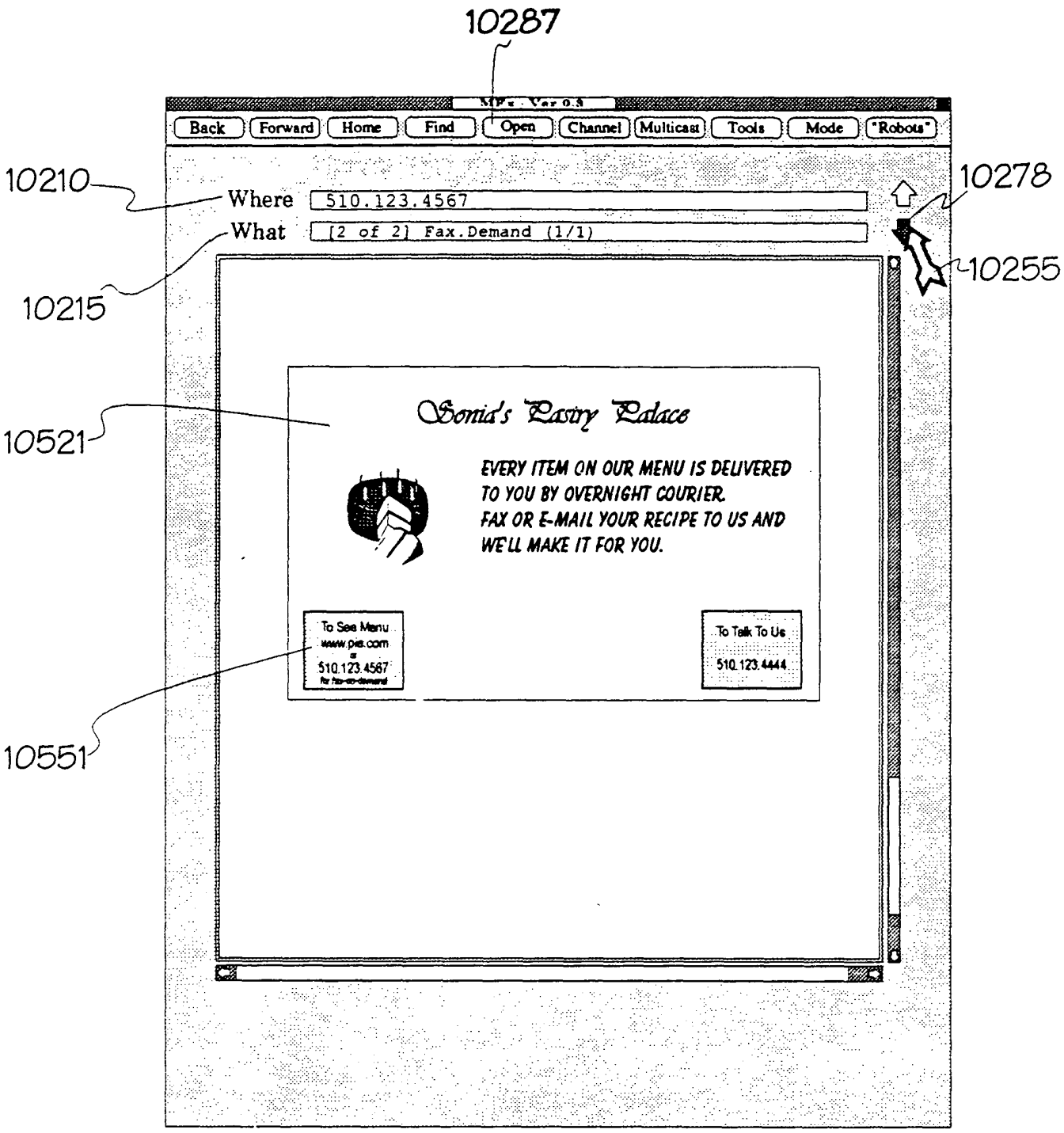

10287
Back
Forward
Home
Find
Open
Channel
Multicast
Tools
Mode
"Robots"
10210
Where
510.123.4567
What
[2 of 2] Fax.Demand (1/1)
10278
10255
10215
10521
Sonia's Pastry Palace
EVERY ITEM ON OUR MENU IS DELIVERED TO YOU BY OVERNIGHT COURIER. FAX OR E-MAIL YOUR RECIPE TO US AND WE'LL MAKE IT FOR YOU.
To See Menu
www.pie.com
or
510.123.4567
To Talk To Us
510.123.4444
10551

Figure 85

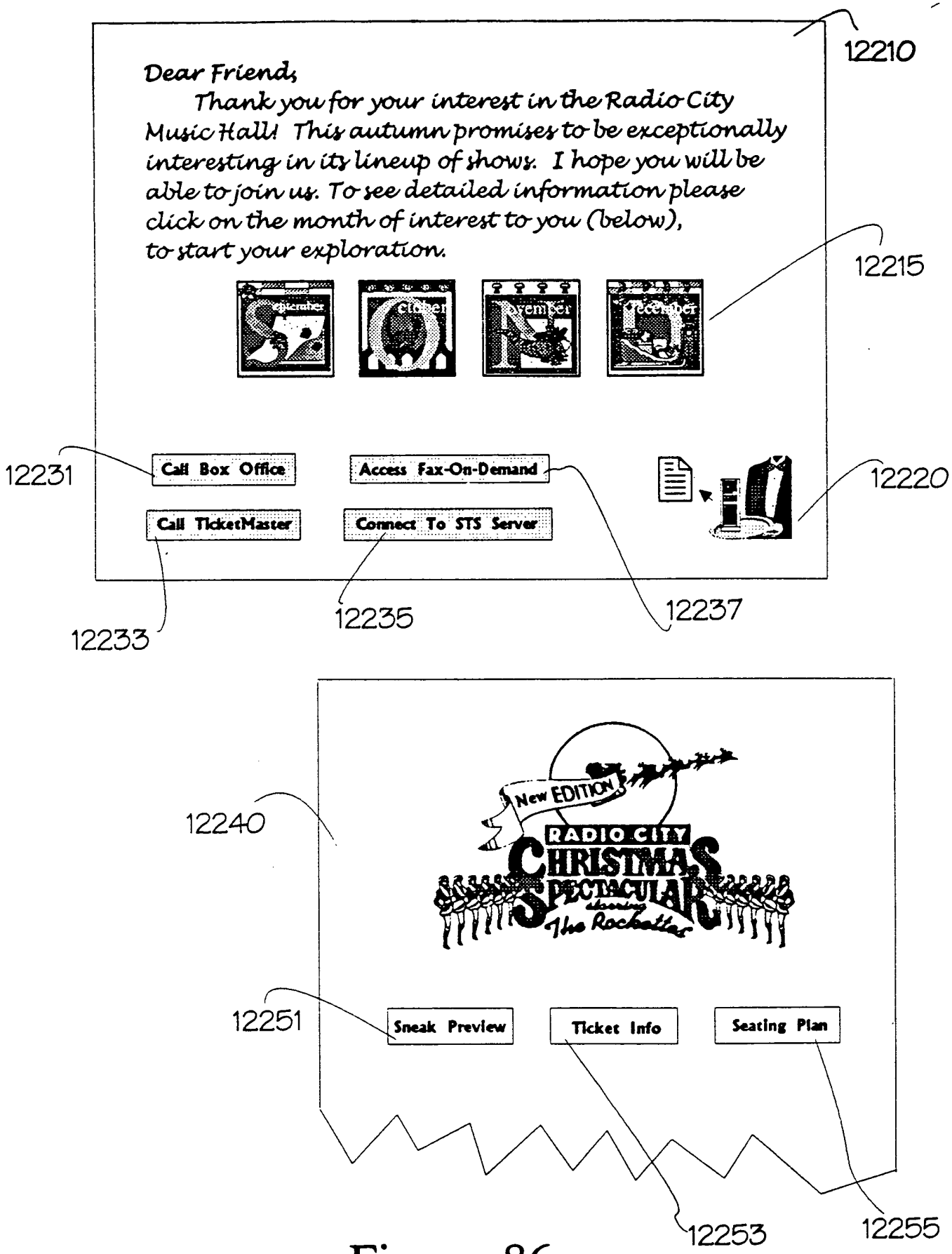

12210
Dear Friend,
Thank you for your interest in the Radio City Music Hall! This autumn promises to be exceptionally interesting in its lineup of shows. I hope you will be able to join us. To see detailed information please click on the month of interest to you (below), to start your exploration.
12215
12231
Call Box Office
Access Fax-On-Demand
12220
Call TicketMaster
Connect To STS Server
12233
12235
12237
12240
New EDITION
RADIO CITY
CHRISTMAS
SPECTACULAR
starring
The Rockettes
12251
Sneak Preview
Ticket Info
Seating Plan
12253
12255

Figure 86

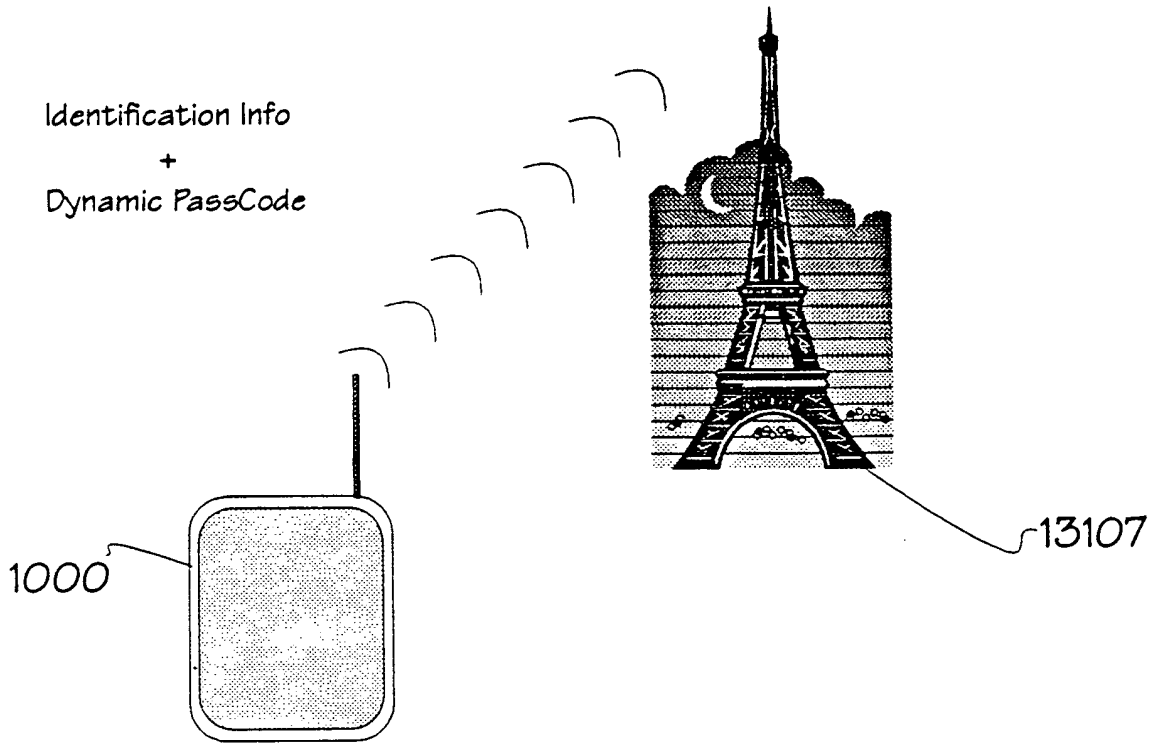


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Figure 87

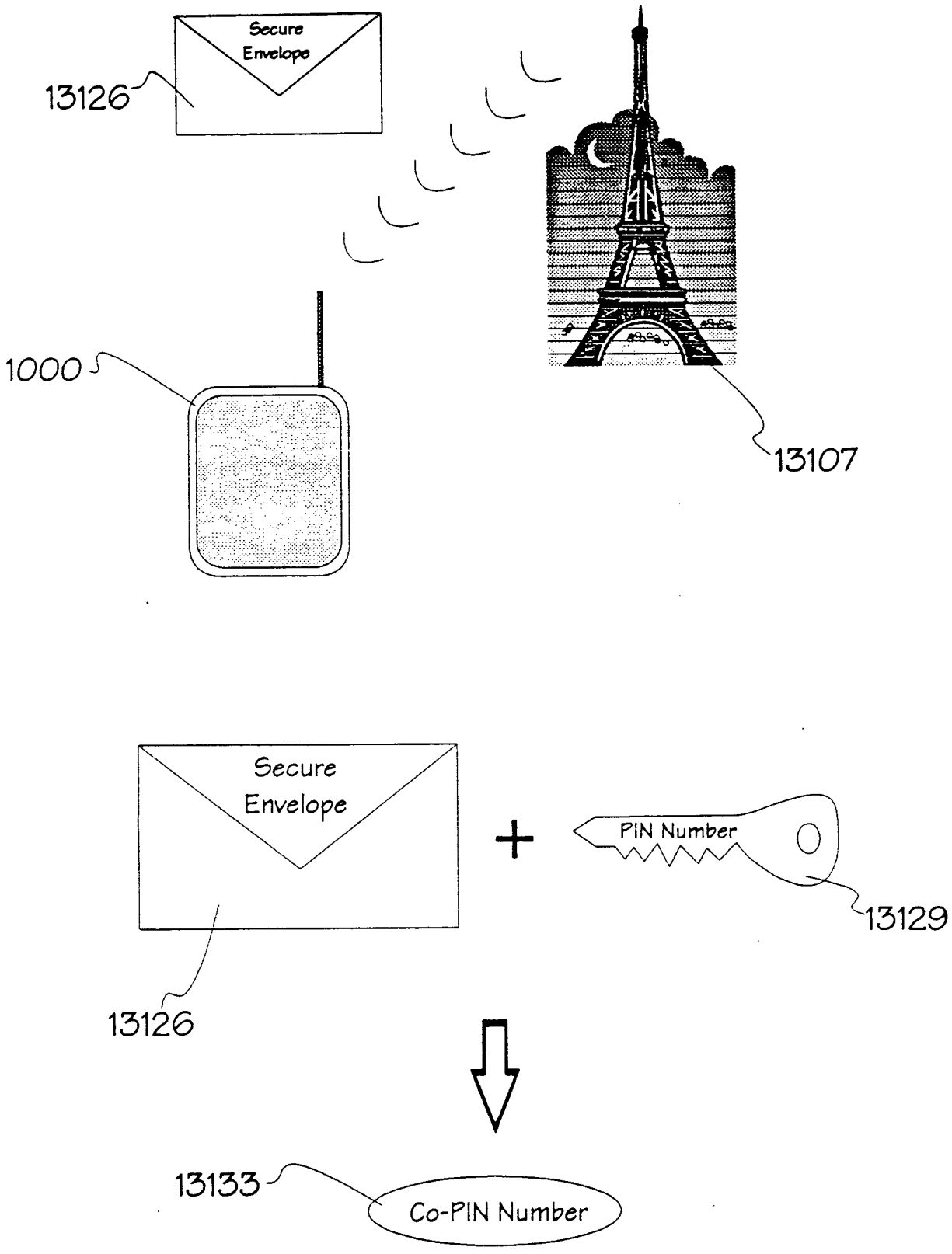

Secure
Envelope
13126
1000
13107
Secure
Envelope
+
PIN Number
13129
13126
13133
Co-PIN Number

Figure 88

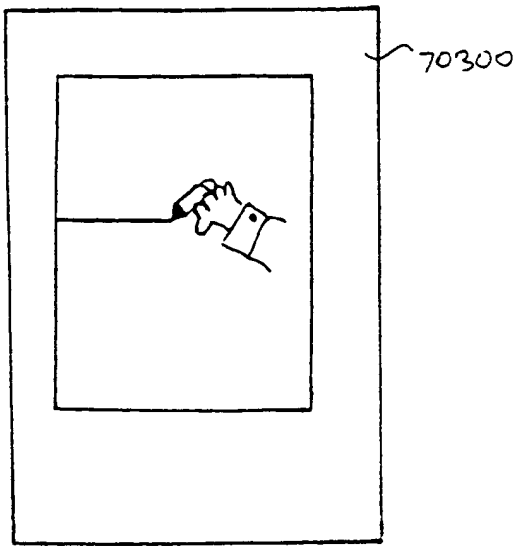


Figure 89(a)

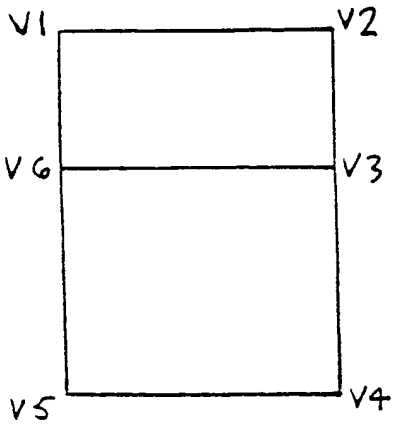


Figure 89(b)

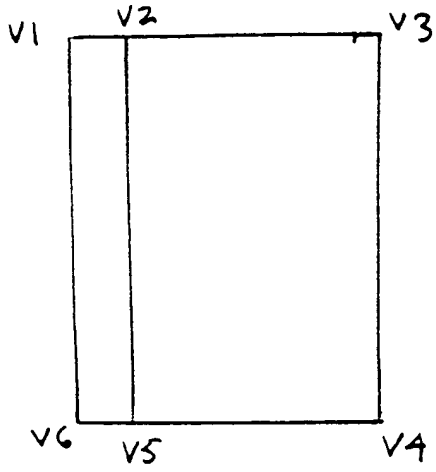


Figure 89(c)

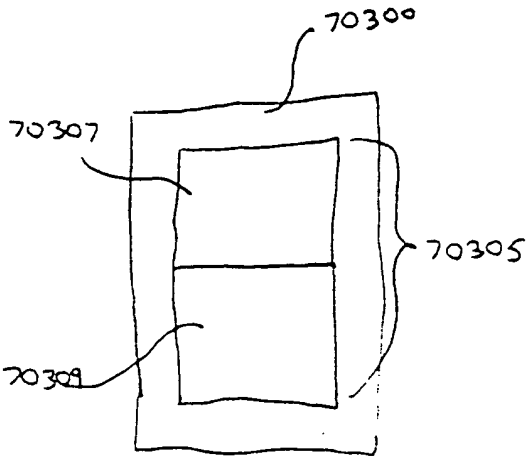


Figure 90(a)

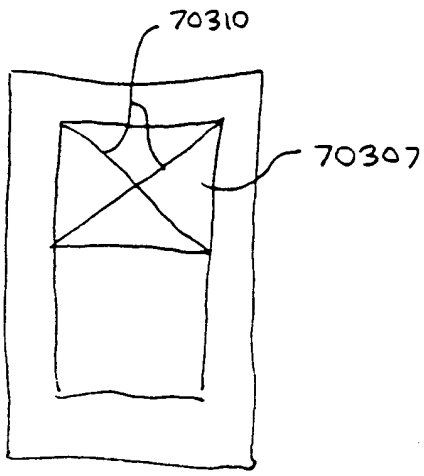


Figure 90(b)

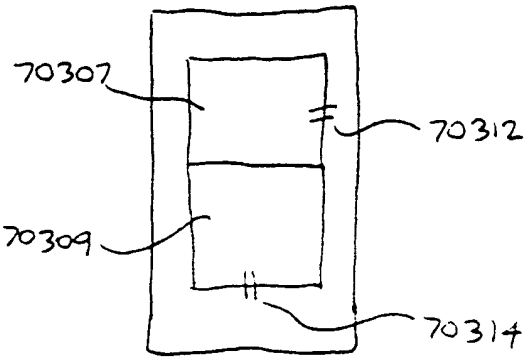


Figure 90(c)

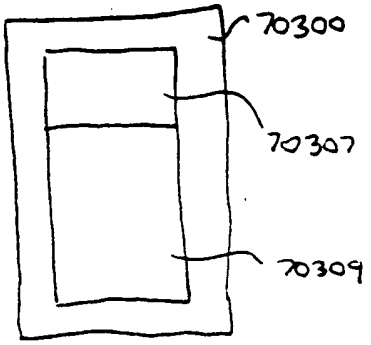


Figure 91(a)

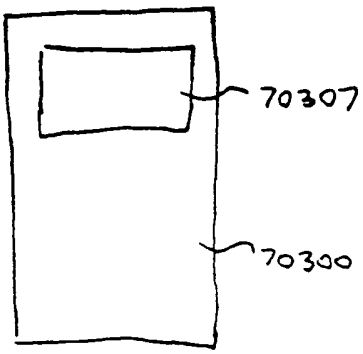


Figure 91(b)

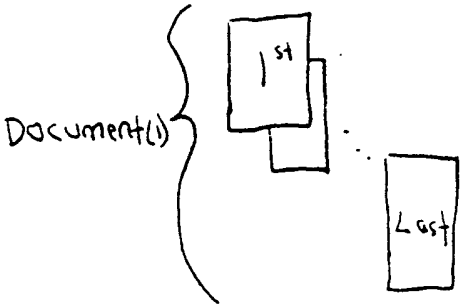


Figure 91(c)

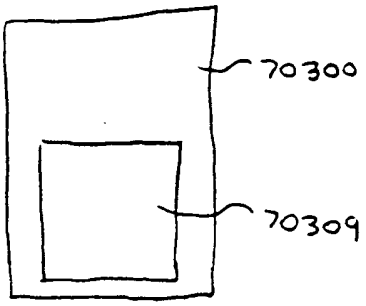


Figure 91(d)

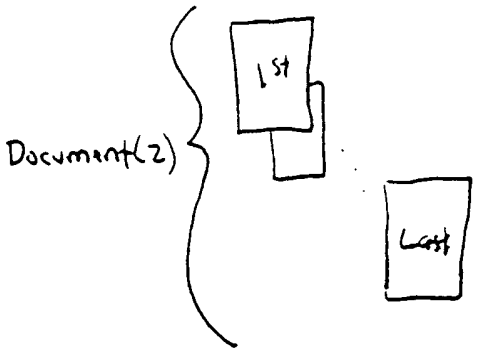
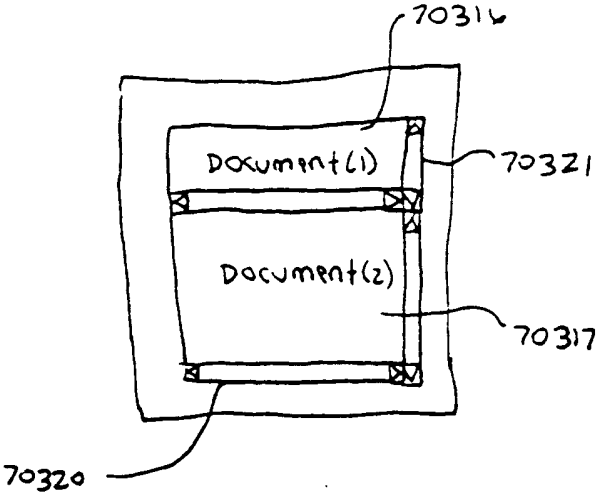


Figure 91(e)



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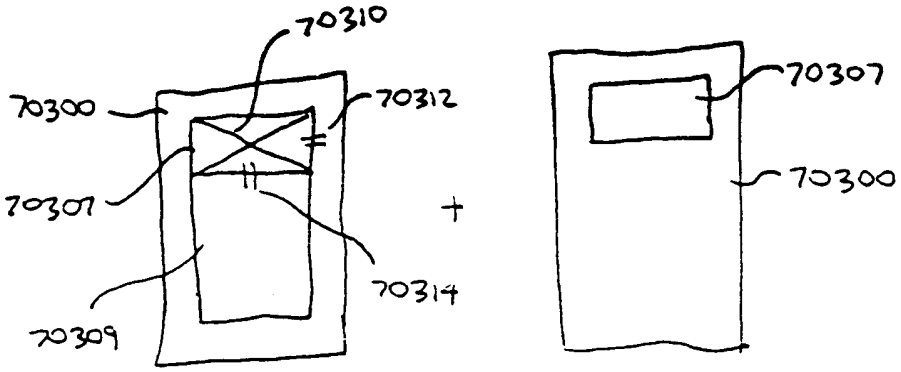


Figure 92(a)

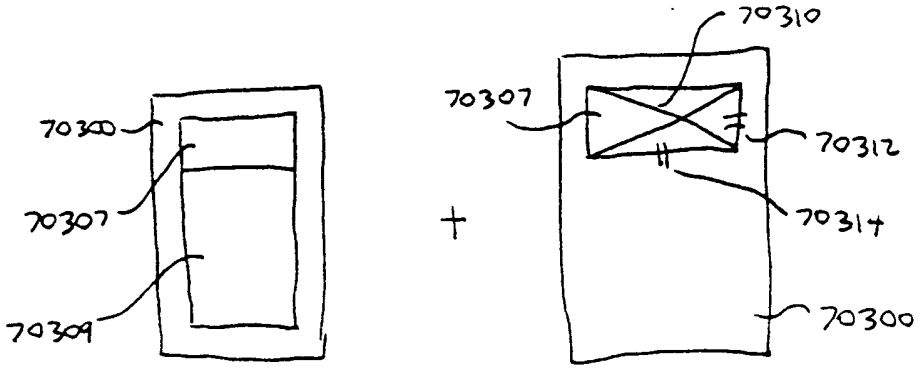
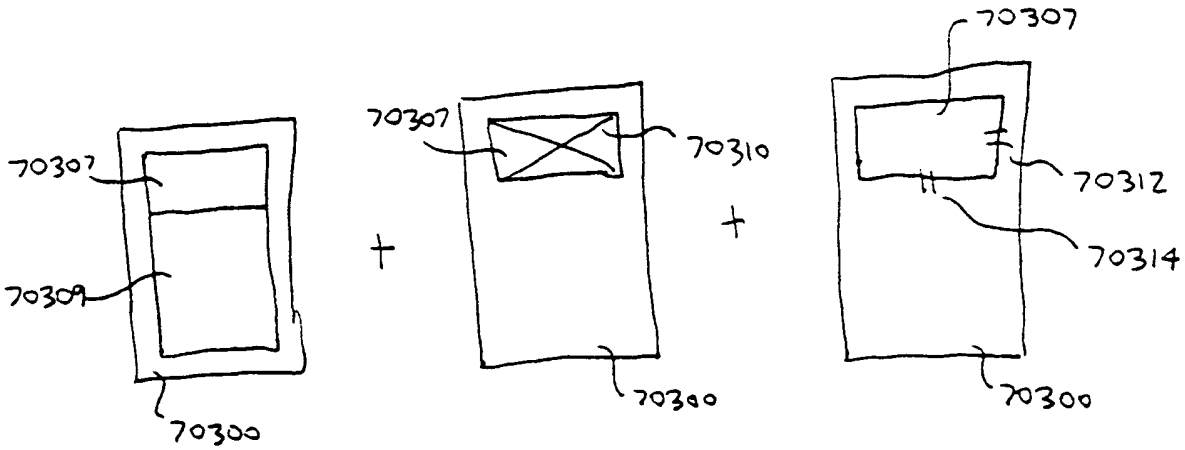


Figure 92(b)



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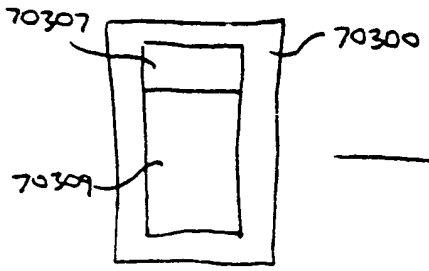


Figure 93(a)

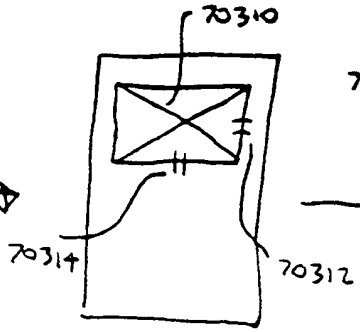


Figure 93(b)

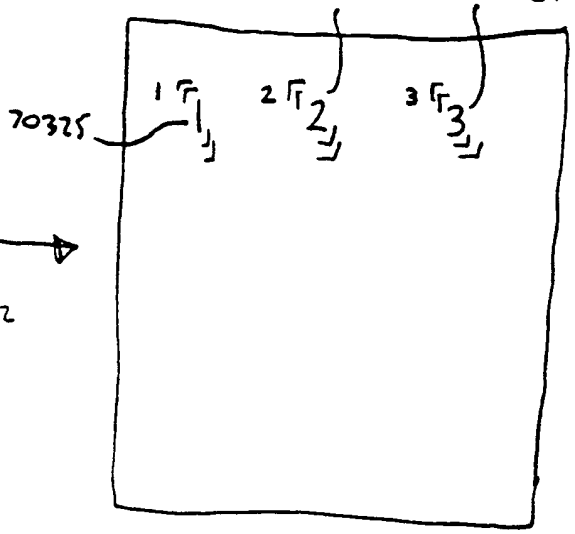
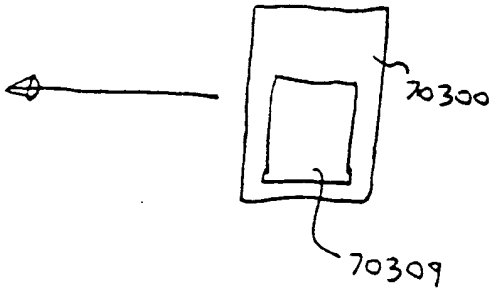


Figure 93(c)



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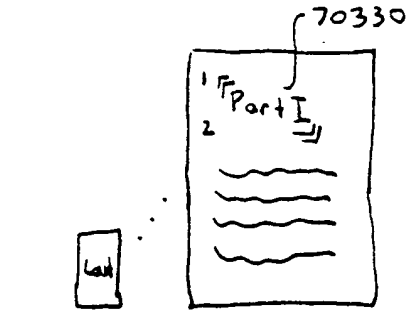
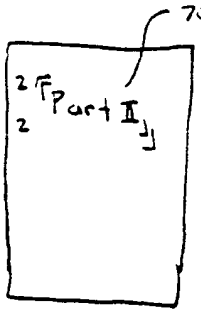


Figure 93(e)



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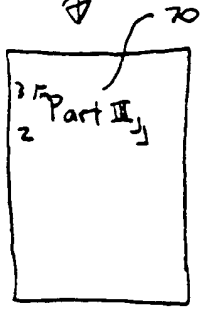


Figure 93(g)

Figure 93

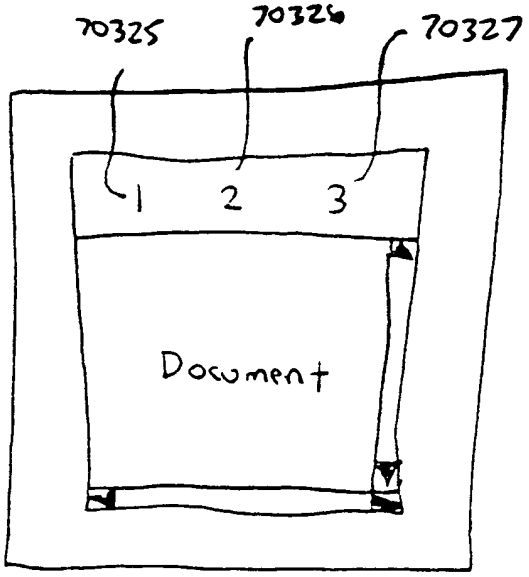
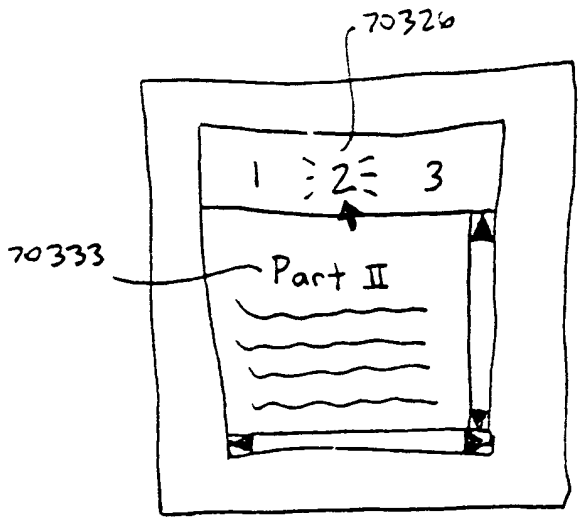


Figure 94(a)



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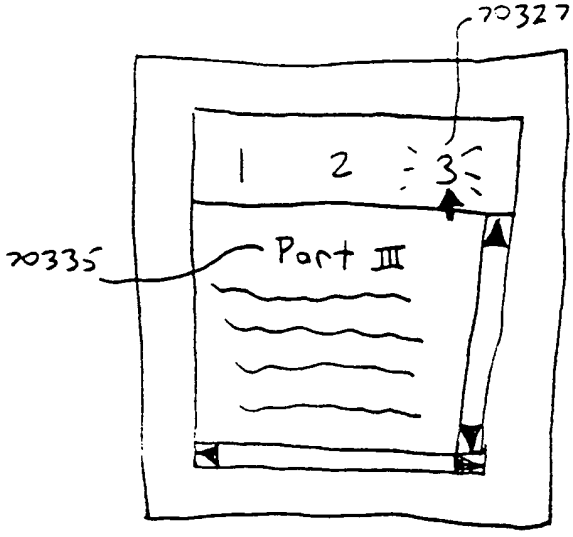


Figure 94(c)

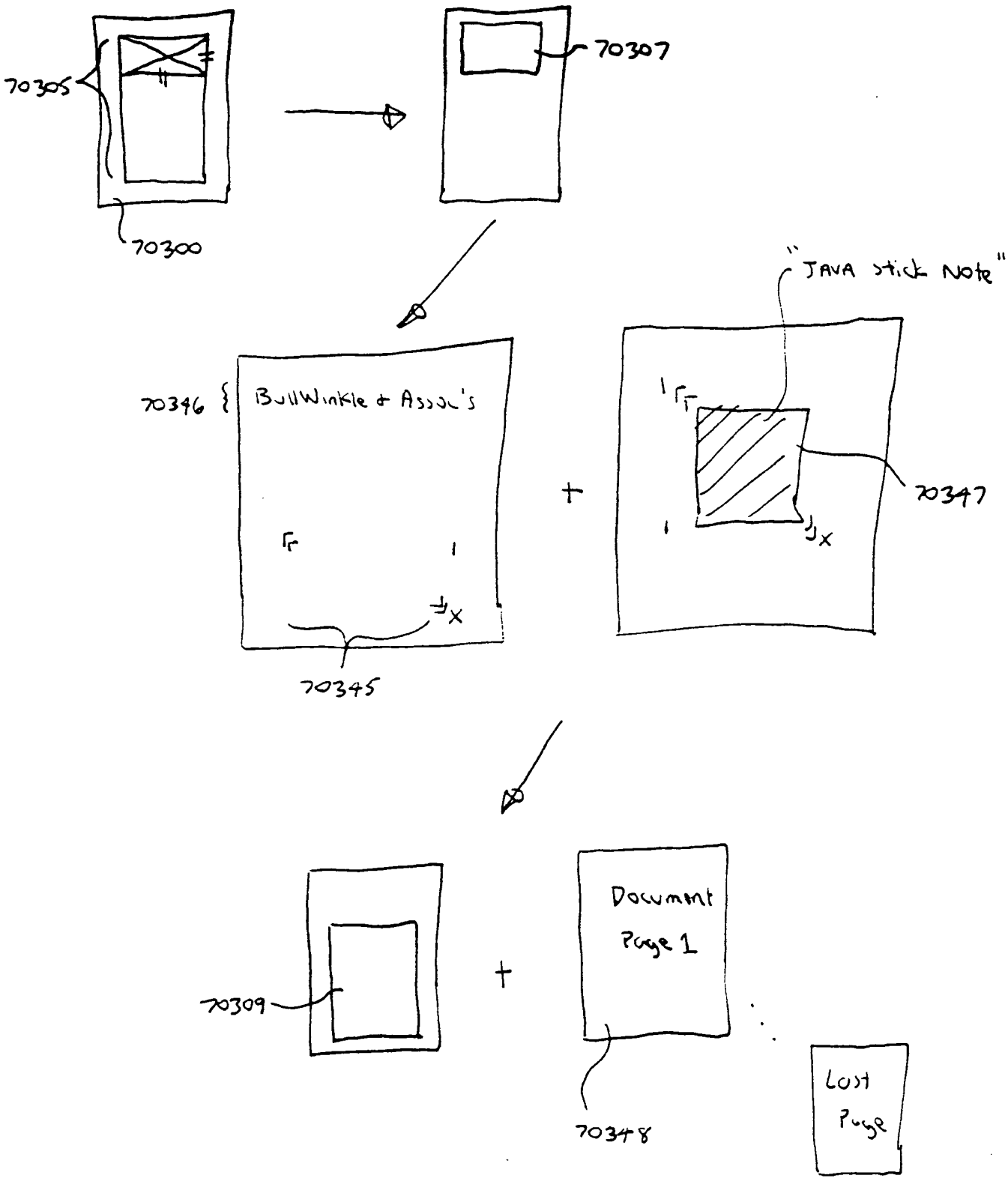

70305
70300
70307
70346
BullWinkle & Assoc's
70345
"JAVA stick Note"
70347
70309
Document
Page 1
70348
Lost
Page

Figure 95

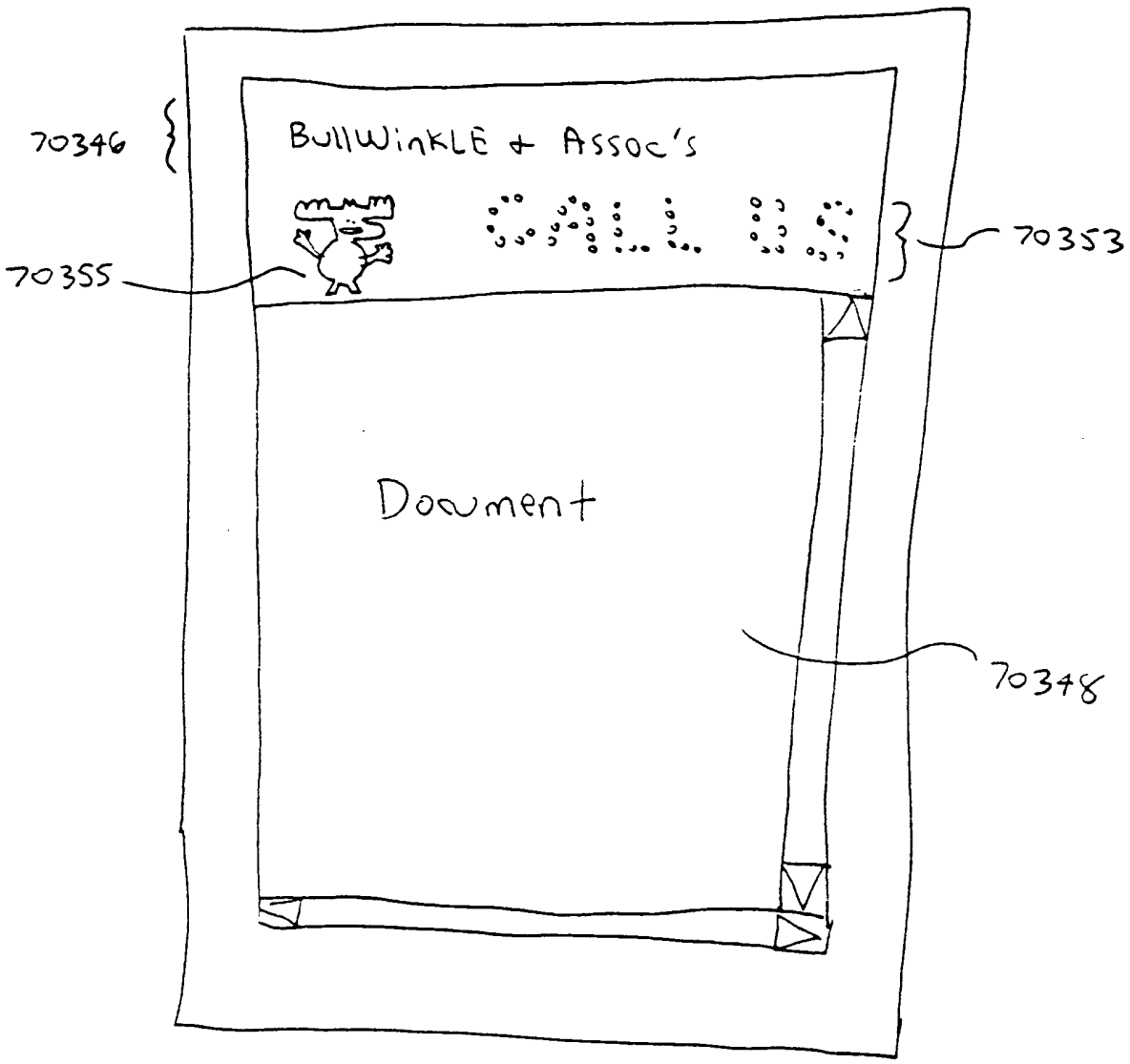
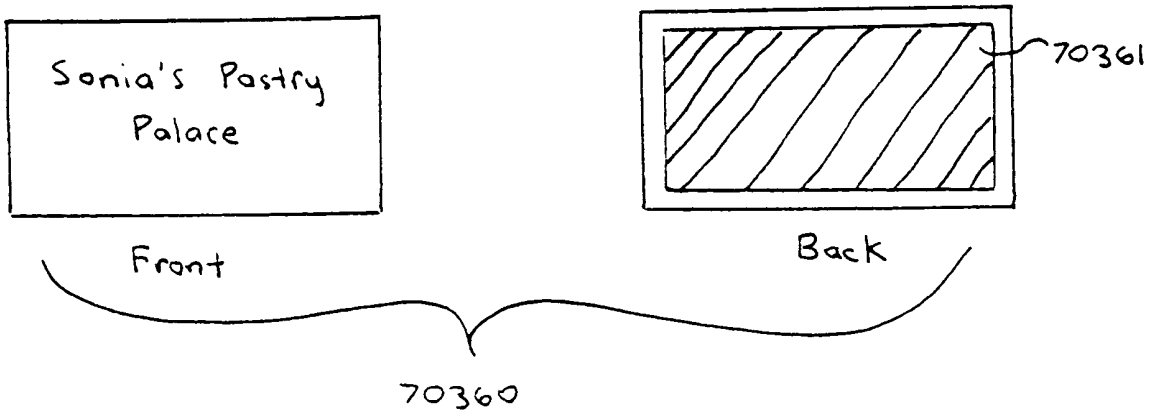


Figure 96


Sonia's Pastry Palace
Front
Back
70361
70360

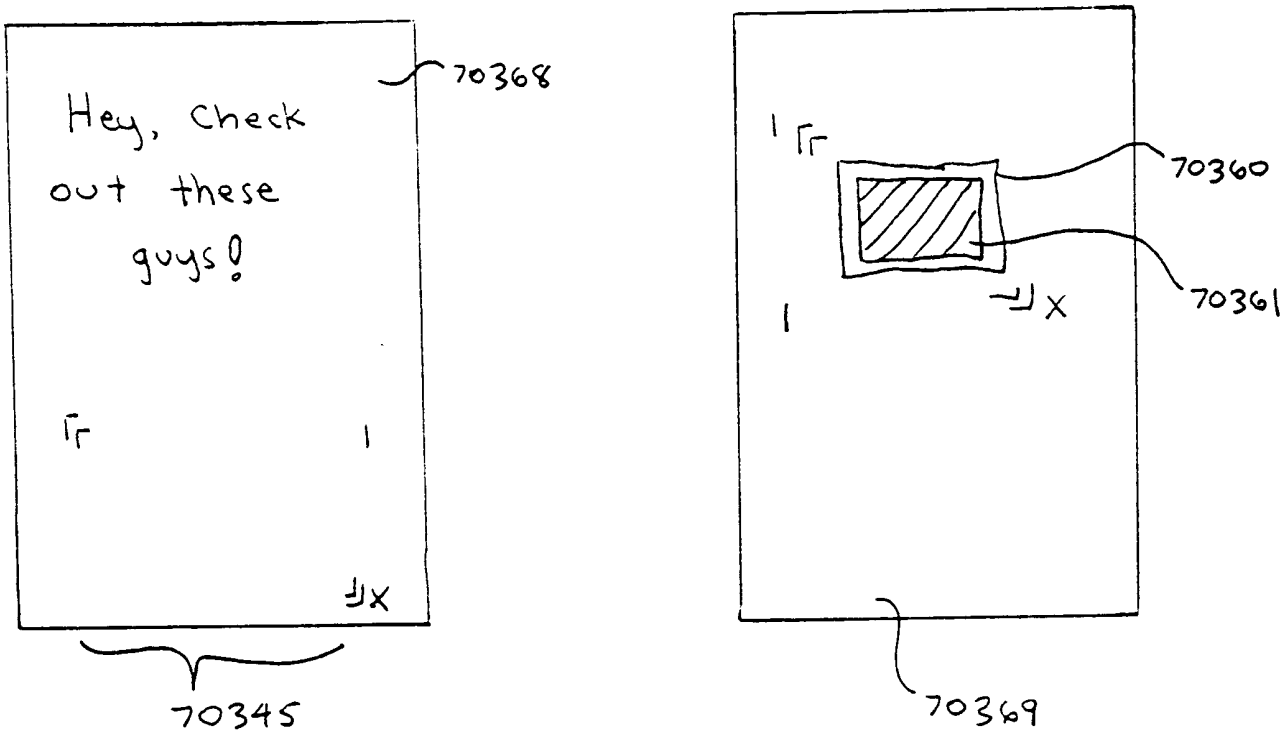

Hey, check out these guys!
70368
70345
70360
70361
70369

Figure 97(a)

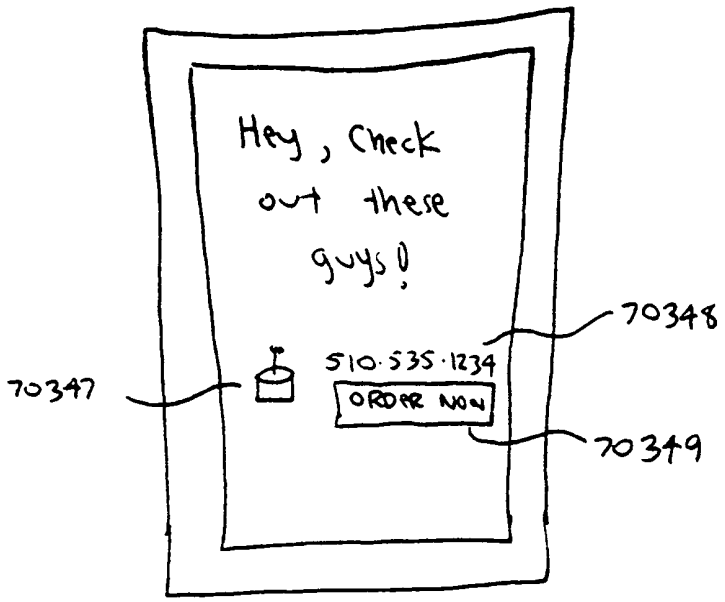


Figure 97(b)

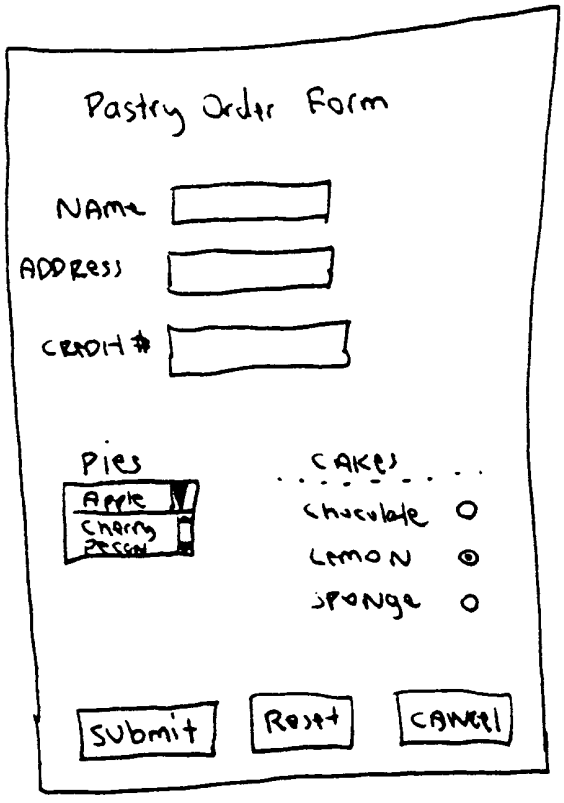


Figure 97(c)

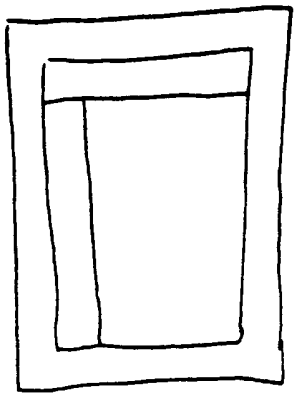
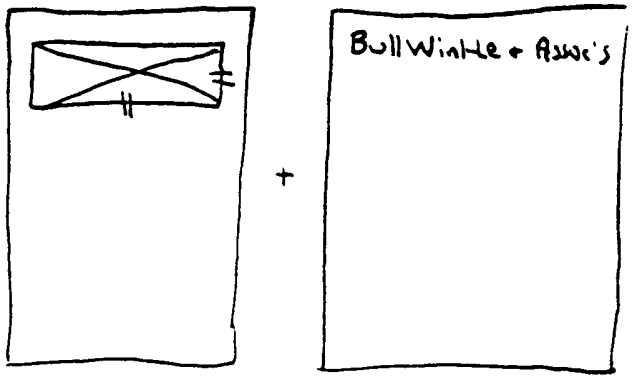


Figure 98(a)



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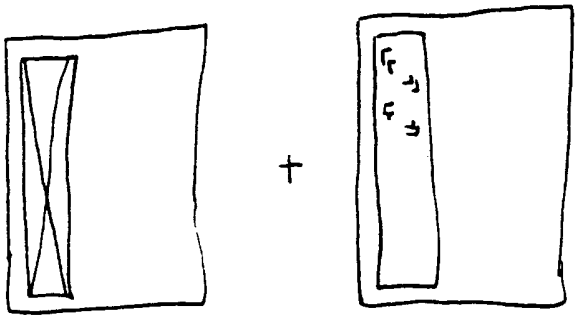

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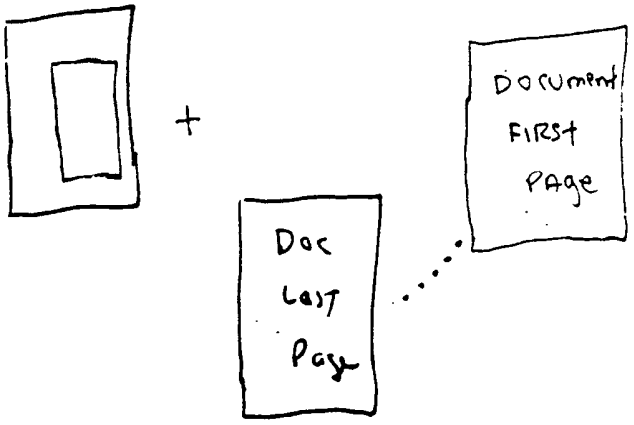


Figure 98(d)

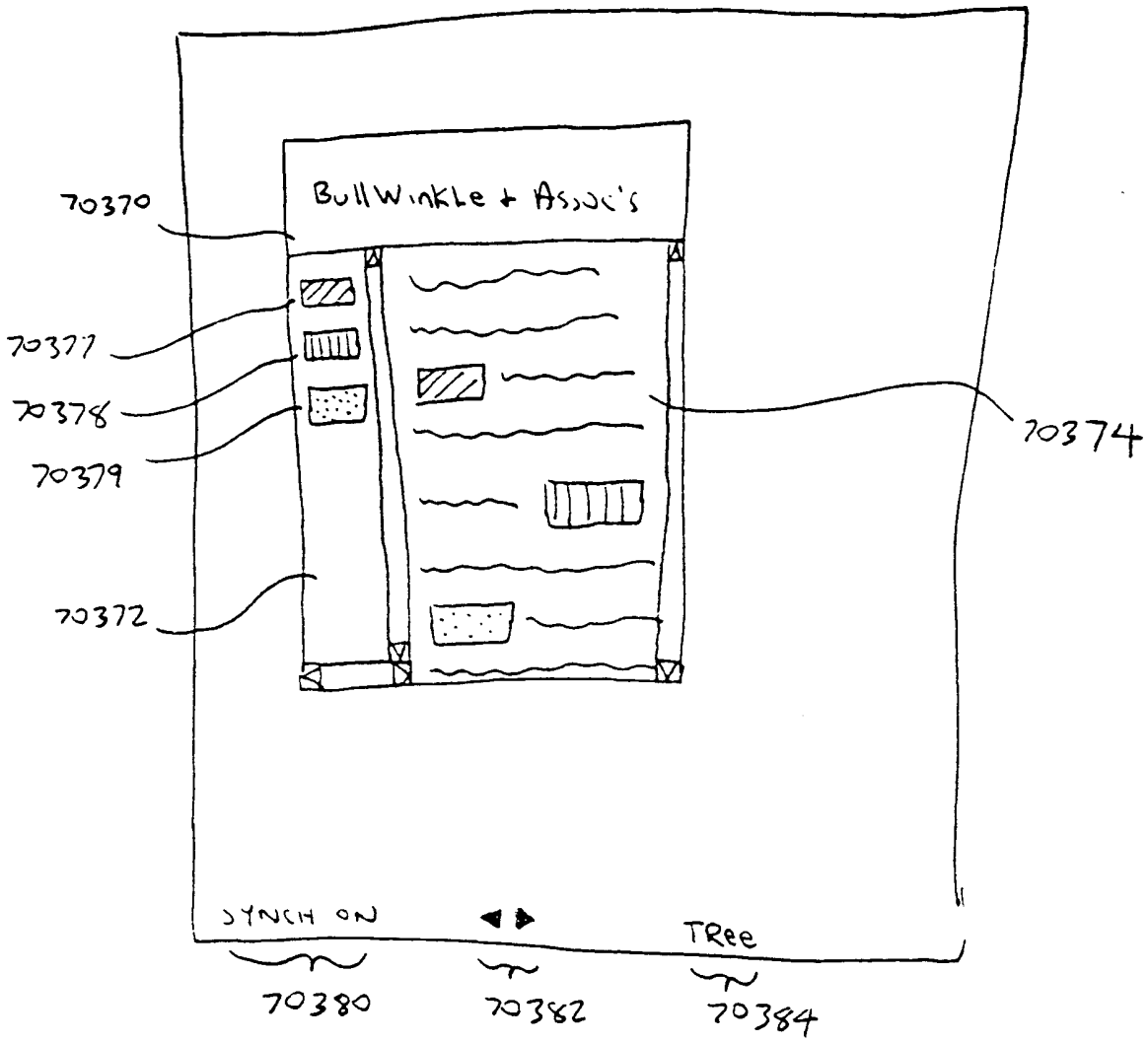

70370
BullWinkle & Assoc's
70377
70378
70379
70372
70374
SYNCH ON
TREE
70380
70382
70384

Figure 99

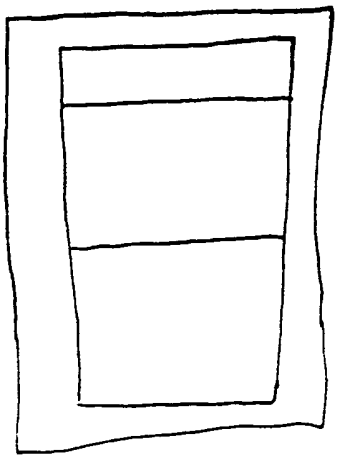


Figure 100(a)

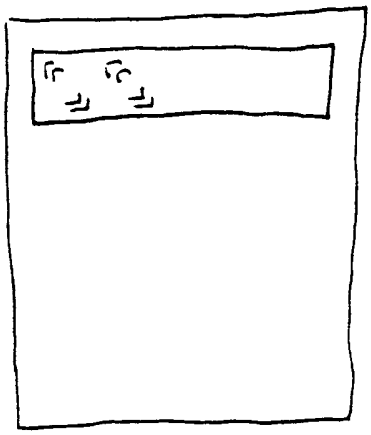


Figure 100(b)

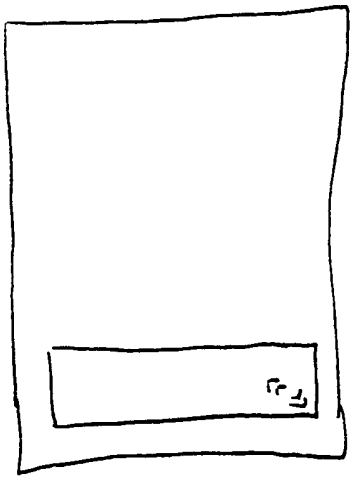
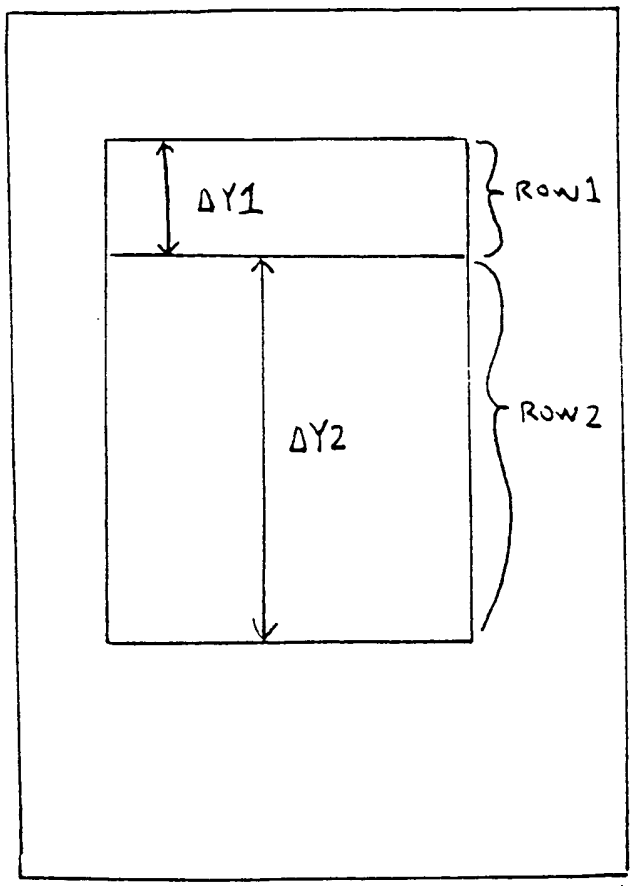


Figure 100(c)



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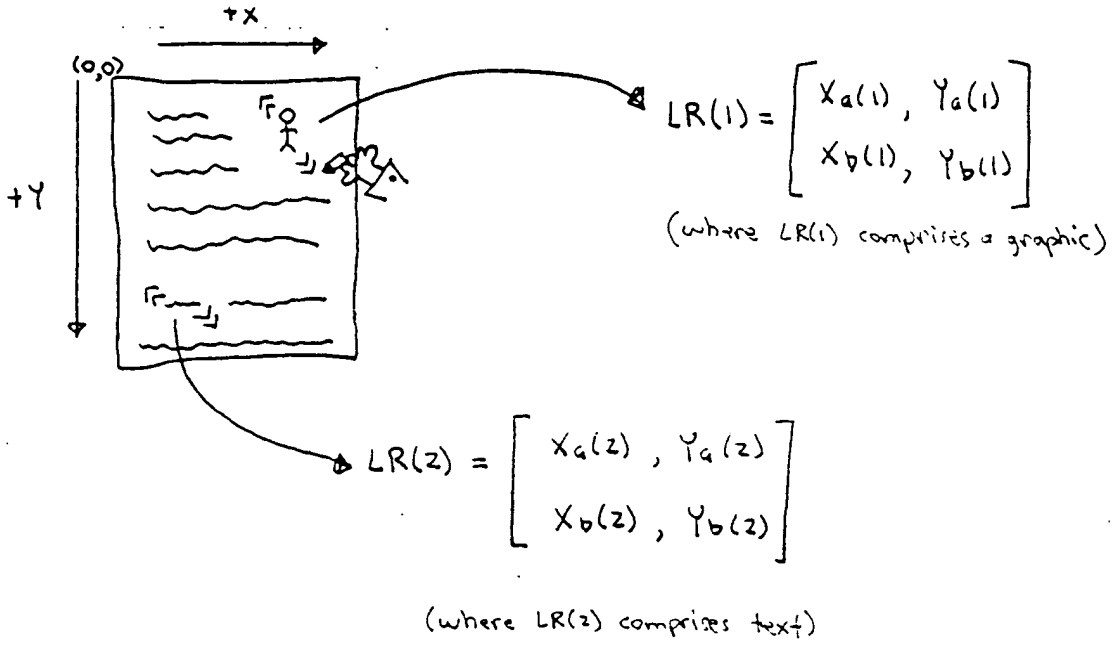


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Figure 102